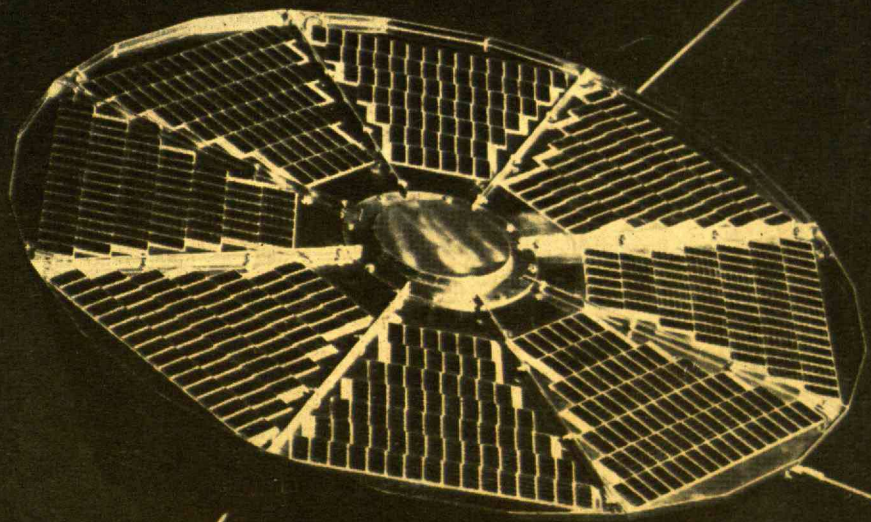


Technology Review

Edited at the Massachusetts Institute of Technology

July, 1965

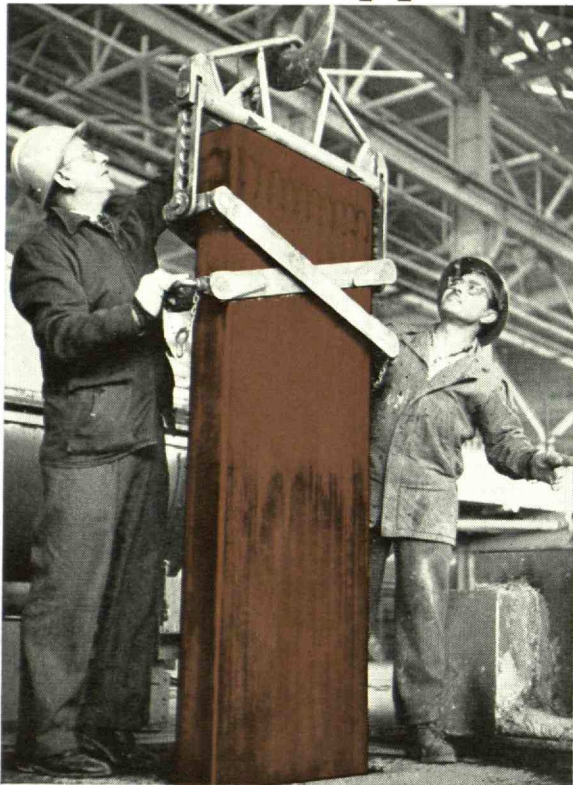


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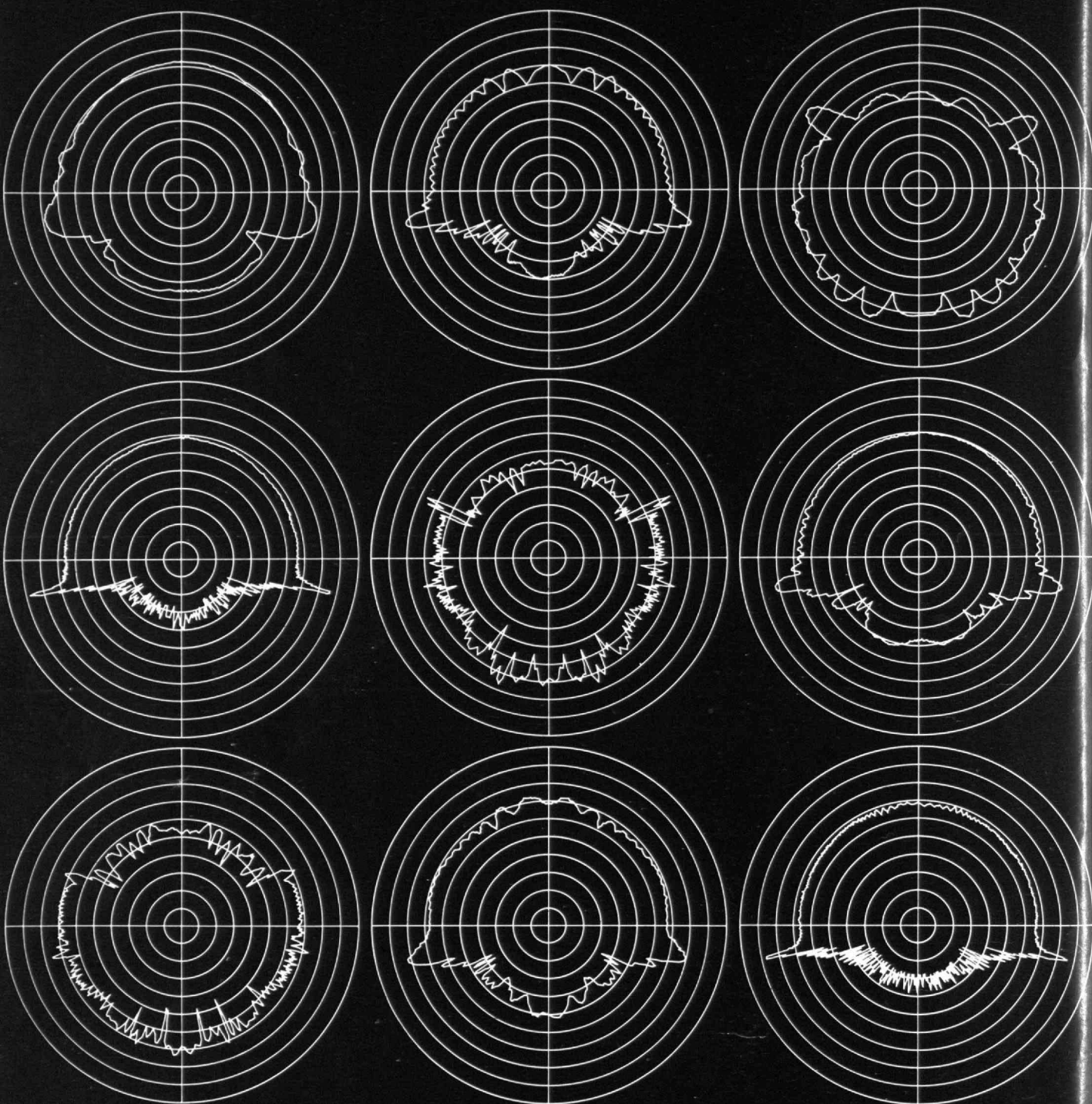
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Information Processing
Radio Physics and Astronomy
Radar
Computer Applications
Space Surveillance Techniques
Re-entry Physics
Space Communications
A description of the Laboratory's work will be sent upon request.

Technology Review

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Officers of the Alumni Association of M.I.T. are: *Donald F. Carpenter*, '22, President; *D. P. Severance*, '38, Executive Vice-president; *Samuel A. Groves*, '34, and *Philip H. Peters*, '37, Vice-presidents; *Frederick G. Lehmann*, '51, Secretary; *Thomas P. Pitré*, Director for Clubs; *H. B. Kane*, '24, Director of the Alumni Fund; *Douglas F. G. Haven*, '52, and *Kenneth S. Brock*, '48, Associate Directors; and *T. Guy Spencer*, '56, Assistant Director.

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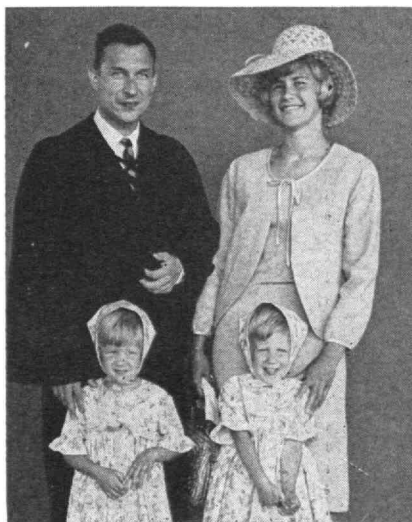
This issue concludes Volume 67. Number 1 of Volume 68 will be issued October 27, 1965. An index of Volume 67 is being prepared and will be sent to readers requesting it.



President Stratton presented a record number of degrees; Donald F. Carpenter, '22, bore the mace.



Exceptionally effective teaching of Frank Perkins, '55, and Barbara Hall won Goodwin medals for them.



Graduates were from 48 foreign countries. Jonny Andersen of Oslo was applauded by wife and daughters.

Commencement Issue

A SUNBLAZER satellite planned by M.I.T.'s Faculty and students is shown on the cover and described in the article on Page 37.

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Individuals Noteworthy



Two New Deans

PRESIDENT Julius A. Stratton, '23, this spring announced the appointment of Professor Lawrence B. Anderson, '30, as Dean of the School of Architecture and Planning, and Professor Robert L. Bishop as Dean of the School of Humanities and Social Science at M.I.T.

Professor Anderson, who succeeds Dean Pietro Belluschi, has been a member of the Faculty since 1933 and head of the Department of Architecture since 1947. He is a graduate of the University of Minnesota. After teaching architectural design at the University of Virginia for two years, he came to M.I.T. for graduate work, receiving the degree of master of architecture in 1930. He was awarded the Paris Prize, the highest student honor at that time, for study at the Ecole des Beaux Arts and spent two years abroad before returning as assistant professor in 1933.

Professor Anderson is one of the outstanding teachers of architecture in the country today. As a partner in the firm of Anderson, Beckwith, and Haible, he has had extensive experience in architectural design, and he has served on a great variety of architectural commissions. He is a member of the American Institute of Architects, past president of the Association of Collegiate Schools of Architecture, a fellow of the American Academy of Arts and Sciences, and a member of Phi Beta Kappa. In 1957 he was appointed a Fulbright Lecturer at the Danish Royal Academy of Fine Arts in Copenhagen, and he is an honorary member of that Academy.

Professor Bishop has been acting dean of his school since the retirement a year ago of Dean John E. Burchard, '23. He was graduated from Harvard in 1937 and was awarded a Sheldon Traveling Fellowship for a year of study in Europe. He then served as an instructor

and tutor at Harvard, receiving his A.M. and Ph.D. degrees there.

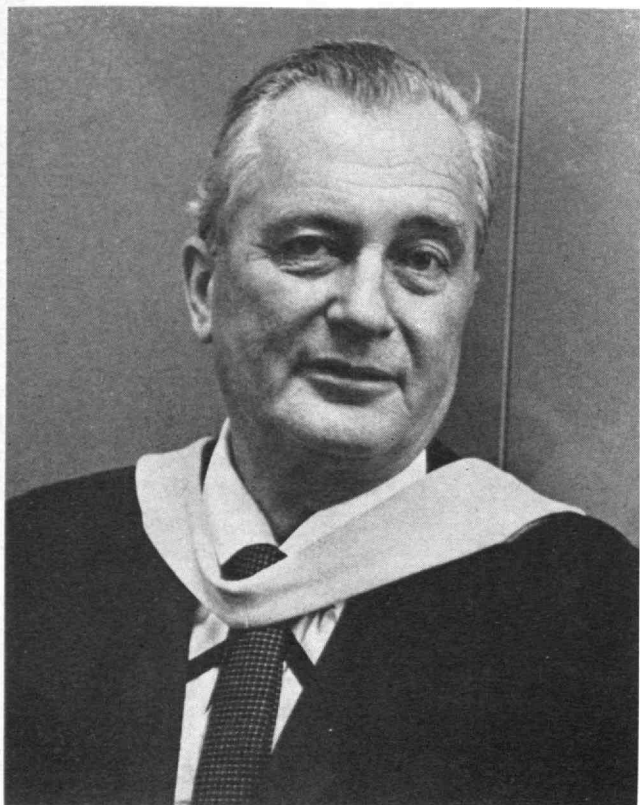
He first came to M.I.T. in 1942 as an instructor in Economics, was promoted to Faculty rank in 1946, and became head of the Department of Economics and Social Science in 1958. During 1961-1962 he was a Ford Foundation Faculty Research Fellow, and he has served also as Visiting Professor at Harvard and at Brandeis. He is a member of Phi Beta Kappa and the American Economic Association and a fellow of the American Academy of Arts and Sciences.

Academy Members

NEWLY elected members of the National Academy of Engineering include Professor *Raymond Lewis Bisplinghoff*, Professor *Charles Stark Draper*, '26, Professor *Edwin R. Gilliland*, '33, *Frederic Ancrum Lord Holloway*, '39, and President *Horton Guyford Stever* of the Carnegie Institute of Technology who was formerly at M.I.T. Formation of this new academy was announced last December 11.

Newly elected members of the National Academy of Sciences include Professor *George H. Buchi* of M.I.T.

(Continued on page 6)



Dean Anderson of the School of Architecture and Planning.



Dean Bishop of School of Humanities and Social Science.



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Individuals Noteworthy

(Continued from page 4)

Hunsaker Professor

ARTHUR E. BRYSON has been named to be Jerome C. Hunsaker Visiting Professor of Aeronautical Engineering at M.I.T. next fall.

Now Gordon McKay Professor of Mechanical Engineering at Harvard, Dr. Bryson did his undergraduate work at Haverford and Iowa State University and received his doctorate at the California Institute of Technology. He was associated with the Hughes Aircraft Company before joining the Harvard faculty in 1953.

After early work in transonic aerodynamics, he conducted experimental and theoretical investigations into slender body theory, turbulence, aerodynamic heating, and missile stability derivatives. He then turned to optimum rocket trajectories and has made major contributions both to the application of computers to optimization problems and to the basic theory of optimization and optimal control.

Assistant Professors

NEWLY appointed assistant professors at M.I.T. are *Donald W. Anderson* (mathematics), *Manuel Blum*, '60 (mathematics), *Wallace B. S. Crowston*, '59 (Sloan School), *David A. Kolb* (Sloan School), *Bernard Maskit* (mathematics), *David B. Montgomery* (Sloan School), *William H. Moore*, '58 (physics), *Popat-lal M. B. Patel* (physics), *Birendra Prasada* (electrical engineering), *Jacobo Rapaport*, '63 (physics), *Kenneth F. Reinschmidt*, '60 (civil engineering), *Samuel Shibko* (nutrition), *Peter Temin*, '64 (Sloan School), *Vigdor L. Teplitz*, '58 (physics), *Terence L. Watts* (physics), *Richard K. Yamamoto*, '57 (physics), *Saul A. Yankofsky* (biology), *Richard N. Zare* (chemistry).

Science Foundation Support

RESEARCH Initiation Grants made by the National Science Foundation went to *Charles A. Berg*, '56, Assistant Professor of Mechanical Engineering, and *Lawrence B. Evans*, Assistant Professor of Chemical Engineering, at M.I.T.

New Associate Dean

PAUL E. GRAY, '54, Associate Professor of Electrical Engineering, will become associate dean of student affairs on July 1. He will also continue as chairman of the Freshman Advisory Council and continue to have teaching and research responsibilities.

Dean Robert J. Holden, who has borne primary responsibility within the Dean's Office for freshmen, will take an increasing interest in campus environmental development.

Professor Gray served in the U.S. Army after receiving his S.M. at M.I.T. in 1955 and returned to receive the Sc.D. in 1960. He was a Ford Postdoctoral Fellow at the Institute in 1961. He has specialized in transistor theory and wrote *The Dynamic Behavior of Thermoelectric Devices* in addition to papers for professional journals and symposia.

Dean Holden, who came to M.I.T. as General Secretary of the Technology Community Association in 1953, has administered the program of the M.I.T. Chapel and is chairman of the Student Center Committee.

(Continued on page 10)

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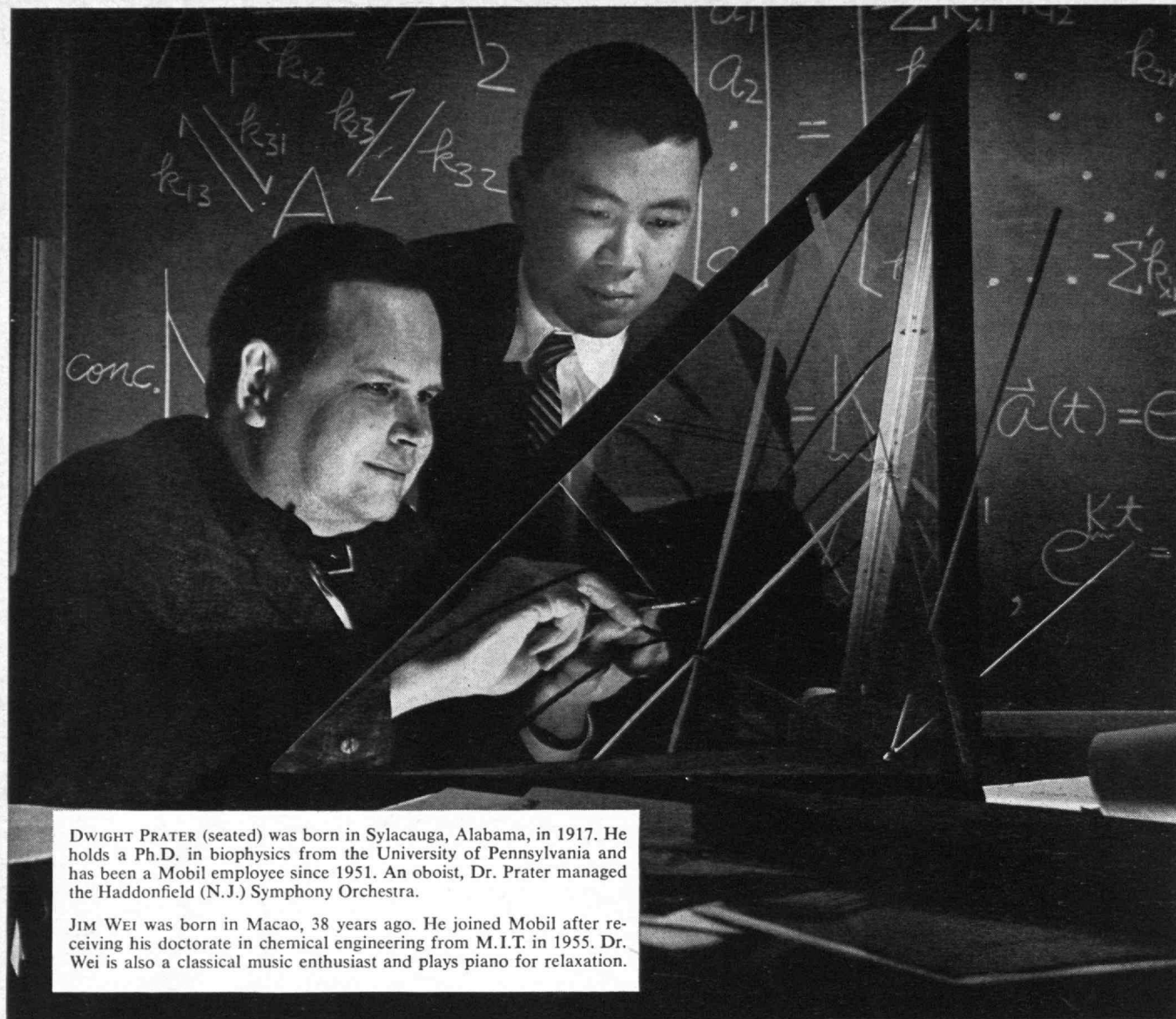
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DWIGHT PRATER (seated) was born in Sylacauga, Alabama, in 1917. He holds a Ph.D. in biophysics from the University of Pennsylvania and has been a Mobil employee since 1951. An oboist, Dr. Prater managed the Haddonfield (N.J.) Symphony Orchestra.

JIM WEI was born in Macao, 38 years ago. He joined Mobil after receiving his doctorate in chemical engineering from M.I.T. in 1955. Dr. Wei is also a classical music enthusiast and plays piano for relaxation.

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These scientists have examined the foundations of petroleum reactions, and the full implications of their discovery extend far beyond the specific problems of petroleum refining. Their work has given scientists everywhere greater insight into a fundamental process of nature.

Mobil encourages its scientists to give full play to their

research interests and abilities; it is significant that the discovery made by Drs. Prater and Wei was in a field in which neither of them specialized in graduate school.

Mobil scientists also are free to explore ideas which may appear to have little immediate application to the company's operations. Dr. Prater and Dr. Wei are two of the 1,700 men and women who are presently engaged in Mobil's \$30,000,000 a year research program—in which imagination is turned into ideas, and ideas into better products and processes.

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Individuals Noteworthy

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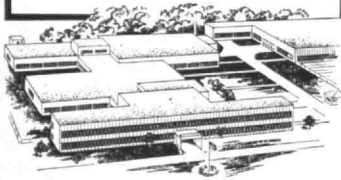
Honors to Alumni

RECIPIENTS of recent awards and similar distinctions have included:

Elizabeth M. Fennessey, '18 (Sister St. John Nepomucene, S.N.D.), the *Pro Ecclesia et Pontifice* Medal, by the Papacy, at Trinity College . . . *Augustus B. Kinzel*, '21, an Honorary Doctor of Engineering degree by Rensselaer Polytechnic Institute . . . *Morrough P. O'Brien*, '25, the Tasker H. Bliss Medal by The Society of American Military Engineers . . . *Merrell R. Fenske*, '28, the Redwood Medal by the Institute of Petroleum;

Basil W. Parker, '33, and *Joseph F. Libsch*, '40, respectively, recognition for 25 years' service, and the Hillman Award for "outstanding teaching and service," by Lehigh University . . . *George J. Bair*, '36, a Distinguished Alumni Award by the Pennsylvania State University . . . *Joe C. Jones*, '57, the Exceptional Civilian Service Award by the U.S. Air Force.

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Alumni Committees

THE M.I.T. Alumni Council has approved nominations for committees as follows: 1966 Alumni Day, *Francis M. Mead*, '29, chairman, and *Donald A. Hurter*, '46, deputy; audit and budget, *John J. Wilson*, '29, chairman, and *Donald F. Carpenter*, '22; 25th reunion, *John H. MacLeod, Jr.*, '41, chairman, and *Louis Rosenblum*, '42; class reunions, *Clarence S. Lyon*, '46, chairman, *Fred W. Aldrich*, '51, *William S. Grinker*, '56, and *Thomas N. Hastings*, '61; 25th reunion gift, *Carl M. Mueller*, '41, chairman, and *Max E. Ruehrmund, Jr.*, '45; honorary members, *Leicester F. Hamilton*, '14, chairman; nominations for visiting committees, *Leroy F. Marek*, '30, chairman, *John R. Wiley*, '33, and *Thomas F. Malone*, '46.

Scott W. Walker: 1909-1965

THE dean of the college of petroleum sciences and engineering at the University of Tulsa, *Scott W. Walker*, '40, died late in May.

Dr. Walker was formerly a member of the M.I.T. Faculty and went to Tulsa in 1946 with the Pan-American Petroleum Corporation. He joined the University of Tulsa's Faculty in 1959, launched major changes in its educational program, and was planning an interdisciplinary doctoral program. He held several patents and had written for petroleum publications.

He is survived by Mrs. Walker and three sons.

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Honors to Faculty

PROVOST Charles H. Townes this spring received honorary degrees from the University of Notre Dame, the University of South Carolina, and Augustana College, and was elected a trustee of the Carnegie Institution. . . . Professor *Jerrold R. Zacharias* received an honorary degree from St. Lawrence University.

Institute Professor (Visiting) *Edwin H. Land* received the 1965 Medal of the Industrial Research Institute. . . . Professor *Albert G. H. Dietz*, '32, was asked to present the annual Edgar Marburg Lecture at this year's meeting of the American Society for Testing and Materials. . . . *James R. Killian, Jr.*, '26, and Professors *Raymond L. Bisplinghoff* and *Charles S. Draper*, '26, took part in NASA's Conference on the Peaceful Uses of Space, held in St. Louis this spring.

Rideout Field

THE U.S. Army Chemical Center and School at Fort McClellan, Ala., opened a new radiological training field in June and named it in honor of 2d Lt. *Percy A. Rideout*, '11, who died in action in World War I. His widow, Mrs. Helen Mills Dodge, and his twin sister, Miss Gertrude H. Rideout, were honored guests at its dedication.

The field was designed to simulate the fallout pattern of a surface burst of a nuclear weapon. It contains a thousand source-well actuators, each containing a Cobalt-60 capsule encased in three inches of concrete.

Teaching Awards

EXCELLENCE in teaching in the Department of Electrical Engineering won Supervised Investors Services, Inc., awards for *Stephen K. Burns*, '62, *William L. Henke, Jr.*, '62, *Jerome H. Saltzer*, '61, and *Joel E. Schindall*, '63; and *Carlton E. Tucker* ['18] awards for *Murray B. Sachs*, '62, and *William B. Lenoir*, '61.

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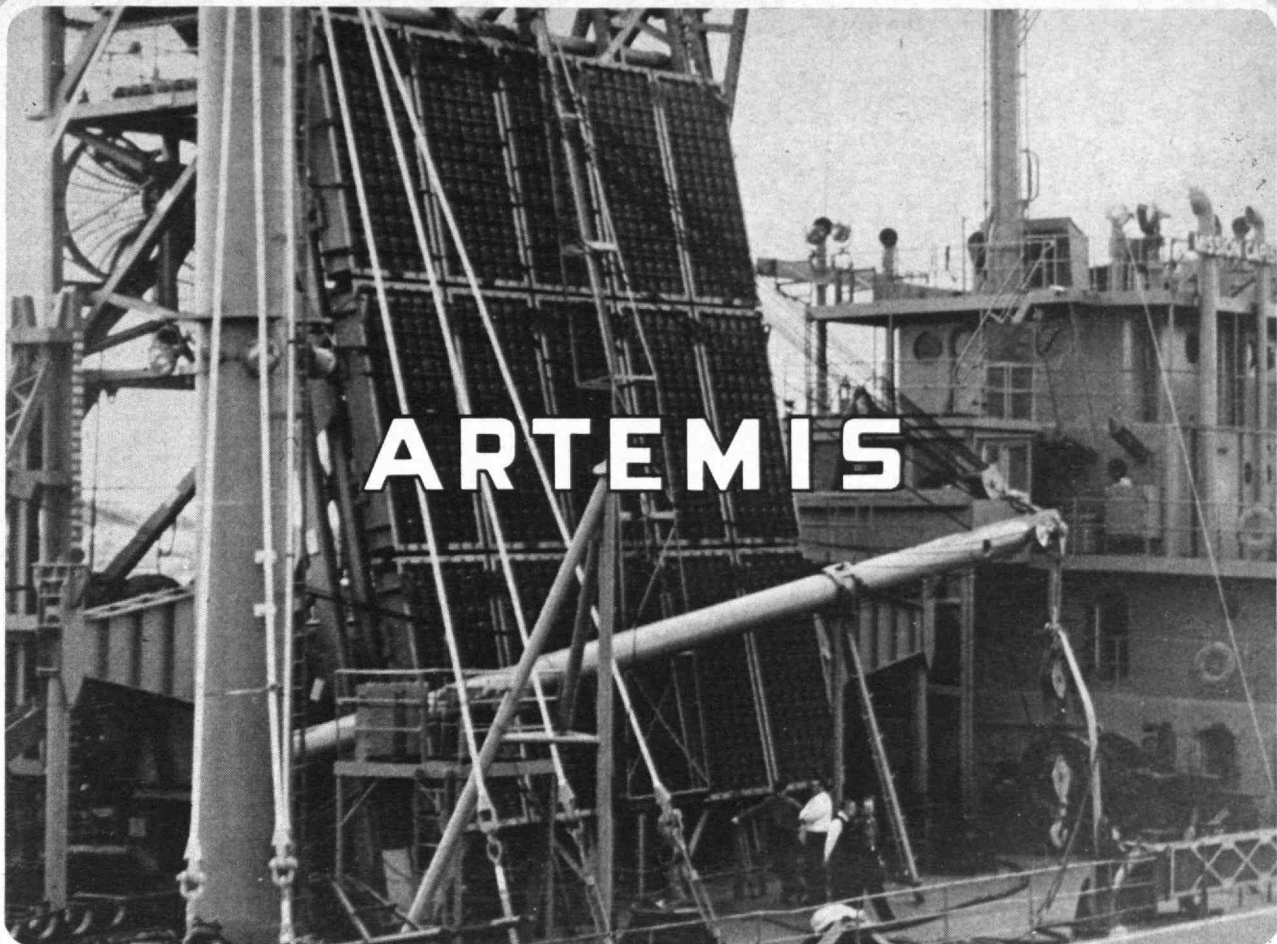
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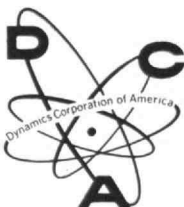
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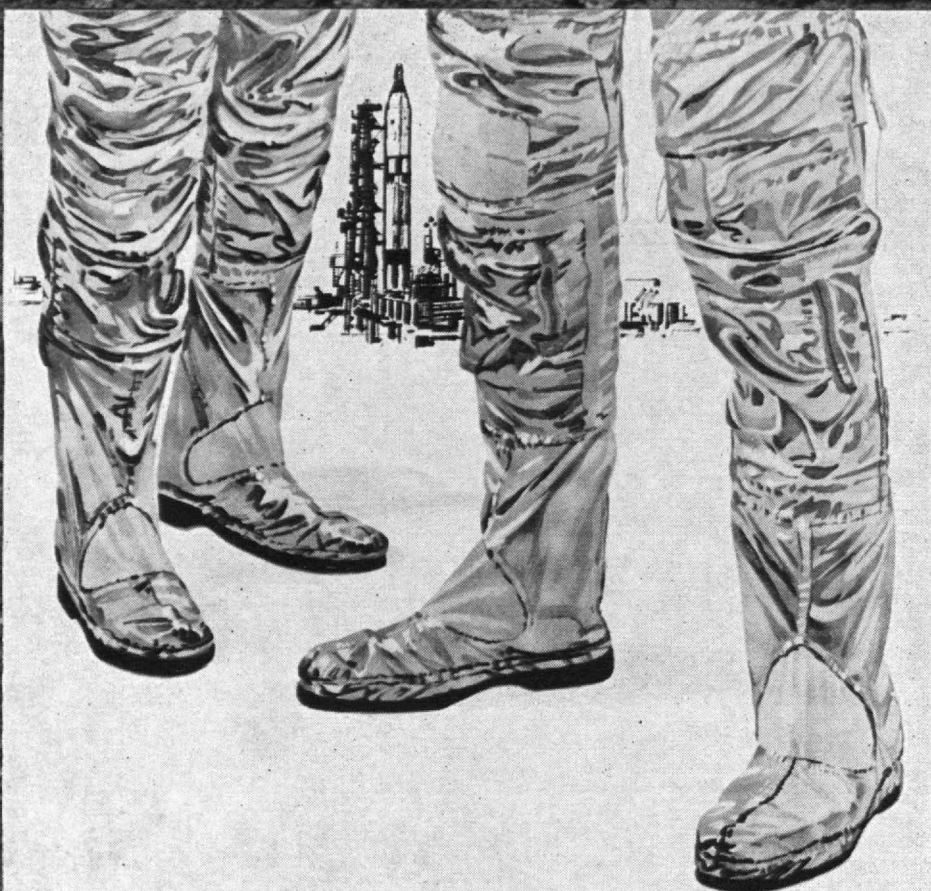
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EG&G Corporate Headquarters and Engineering Facilities, Bedford, Massachusetts

EDGERTON, GERMESHAUSEN & GRIER, INC., has realized a sound and profitable growth during its 18 years of corporate life in the Greater Boston area. Its beginnings came about through circumstances which brought together the Company's three principals while each was associated with the Massachusetts Institute of Technology. After working together for several years at MIT, Messrs. Edgerton, GERMESHAUSEN and Grier established a business partnership, which later became deeply involved in the Manhattan Project. The partners incorporated in 1947 to perform more extensive electronic instrumentation and technical photographic work related to full-scale nuclear weapons tests. Since that time, the Corporation has developed a balance between technical services, products and systems hardware, and supporting research and development. The Corporation now employs some 2800 personnel, the largest proportion of whom are employed at the Company's Bedford and Boston locations.

In addition to a high percentage of customer-sponsored research and development, EG&G maintains its own continuing programs. The Company-sponsored work is concentrated on: 1) new products and product improvement; and 2) corporate research and development programs leading to new technological missions for the future, and to improvement of the long-term outlook for existing missions.

Research and development has always played a prominent part in the Company's diversified activities. In capsule, EG&G is recognized principally for its competence in the specification, design, construction, installation and operation of control and information gathering

systems, particularly those involving high-power, extremely fast, pulse phenomena. Examples of such phenomena are nuclear explosions, nuclear reactors, pulsed light sources, and sonar.

The Corporation's role in the AEC's nuclear weapons and Plowshare programs embraces the timing and firing of nuclear devices underground, the recording and analysis of nuclear reaction phenomena, the detection and measurement of radiation environments, and scientific photography of nuclear events. EG&G continues to be the primary instrumentation contractor devising and operating control and data acquisition systems for the Rover-Nerva nuclear rocket engine project.

The Company is moving forward in these and other instrumentation and technical service programs, with concurrent emphasis on expansion of the product line. The product line consists primarily of electronic switches, flashtubes, stroboscopic flash instruments, high-speed oscilloscopes, light measuring instruments, and oceanographic equipment. New products recently introduced include a thermoluminescent dosimetry instrument for radiation measurements, a line of modules designed specifically for use in high-energy physics research, and exploding bridge wire firing units.

EG&G offers unique opportunities to conduct research, development, and engineering in a creative scientific environment. Broad, expanding activities allow engineers and scientists to make significant contributions in such areas as applied optics, data acquisition and transmission systems, device development in radiation technology, oceanography, and others.



Individuals interested in learning more about EG&G's work in the Greater Boston area, or at its Divisions in California, Nevada, and New Mexico, are invited to inquire. If you prefer, send us a complete resumé of your education, experience, and scientific interests so that we may arrange further discussions. Contact Elton L. Harris, Corporate Director of Industrial Relations, Crosby Drive, Bedford, Massachusetts 01730.

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Individuals Noteworthy

(Continued from page 10)

New Posts

NAMED in the news of promotions, elections, and appointments were:

Robert W. Richardson, '26, as Associate Director of Development, Pennsylvania Military College . . .

David A. Shepard, '26, as a Trustee, System Development Corporation . . . *Eric A. Bianchi*, '29, as Assistant Vice-president—Planning, Worthington Corporation;

Walter L. Wise, Jr., '34, as a Member, Executive Committee, American Supply and Machinery Manufacturers' Association, Inc. . . . *Benjamin F. Schlimme*, '35, as General Manager, Industrial and Biochemicals Department, E. I. du Pont de Nemours & Company . . . *James McCormack*, '37, as a Director, Eastern Air Lines;

Richard U. Surbeck, '37 as General Manager, International Division, Fairchild Camera and Instrument Corporation . . . *Harlow J. Reed*, '39, as Executive Vice-president—Metals, Olin Mathieson Chemical Corporation . . . *Wesley*

J. Van Sciver, '40, and *Alexis Ostapenko*, '57, respectively, as Professor of Physics, and as Professor of Civil Engineering, Lehigh University . . . *Martin L. Ernst*, '41, and *Theodore P. Heuchling*, '46, as Vice-presidents, Arthur D. Little, Inc. . . . *Robert E. Hewes*, '43, as Dean of Students, University of Connecticut;

Richard R. Martin, '45, and *Frederic E. Irish, Jr.*, '52, respectively, as Head and as Associate Head, Equipment Engineering Department, *David L. Bailey*, '49, and *J. Paul Locher, 3d*, '58, respectively, as Head and as Associate Head, Data Processing Department, *Howard J. Kirshner*, '54, as Associate Technical Director, Air Traffic Systems Division, Mitre Corp.;

George E. Bierce, Jr., '47, and *Edward E. David, Jr.*, '47, respectively, as Head, Communication Services Department, and as Executive Director—Research, Communications Systems Division, Bell Telephone Laboratories . . . *George C. Grogan, Jr.*, '48, as Vice-president—Manager, Technical Department, Ventura Division, Northrop Corporation;

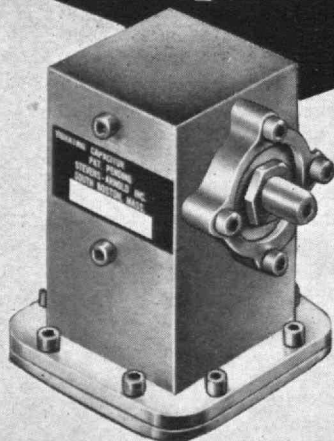
Francis J. Sullivan, '49, as Director, Electronics and Control Division, Advanced Research and Technology, NASA . . . *Gerald A. Lessells*, '50, as Manager—Process Development, Mobil Finishes Company . . . *Irvine F. Williamson*, '50, as Plant Superintendent, Abrasive Division, Norton Company;

E. Leigh Secrest, '51, as President, Research Foundation, and as Dean of the Graduate School, Texas Christian University . . . *Carroll F. White*, '51, as Vice-president, Overseas Chemical Division, W. R. Grace & Co. . . . *Harold N. Bogart*, '54, and *Robin Crawshaw*, '59, respectively, as Director, Manufacturing Development Office, and as Supervisor, Dealer Financial Analysis Section, Controller's Office, Ford Motor Company;

Peter R. Schultz, '55, as Manager, Inertial Analysis Section, Guidance Systems Department, Electronics Division, Aerospace Corporation . . . *Dale R. Hoff*, '56, as Assistant Director, Department of Synthetic Organic Chemistry, Merck Sharp & Dohme Research Laboratories.

(Concluded on page 20)

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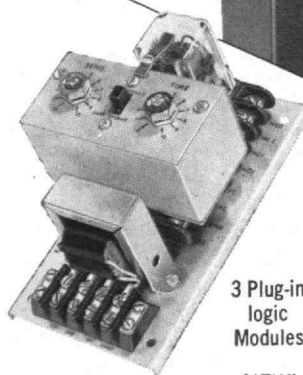
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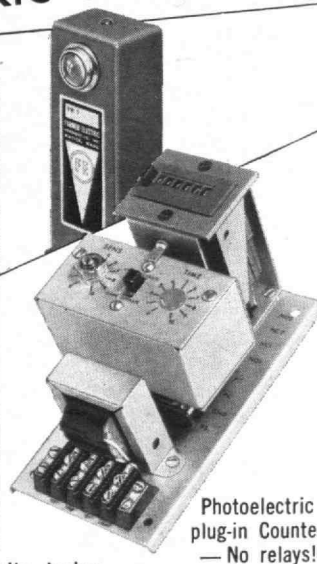
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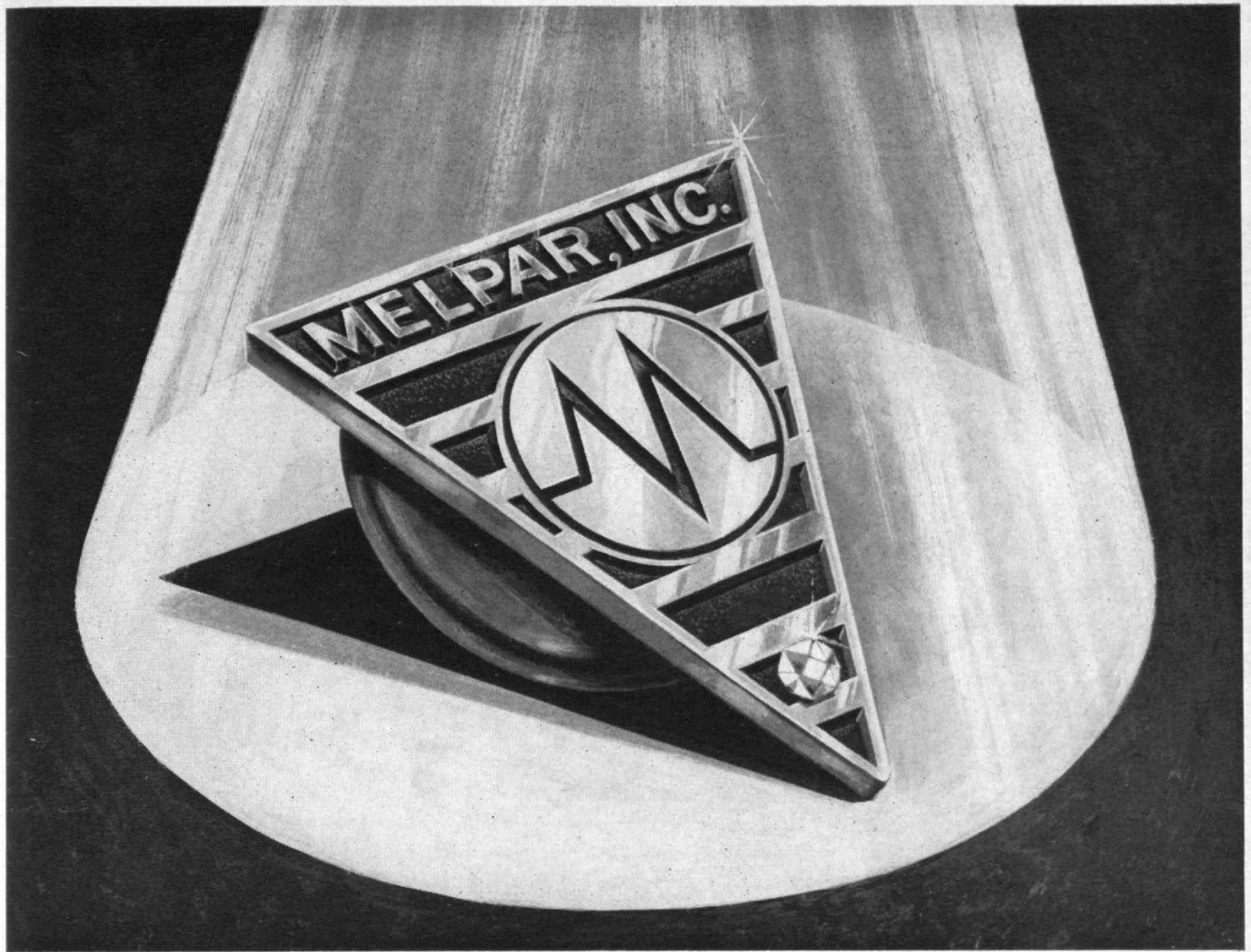
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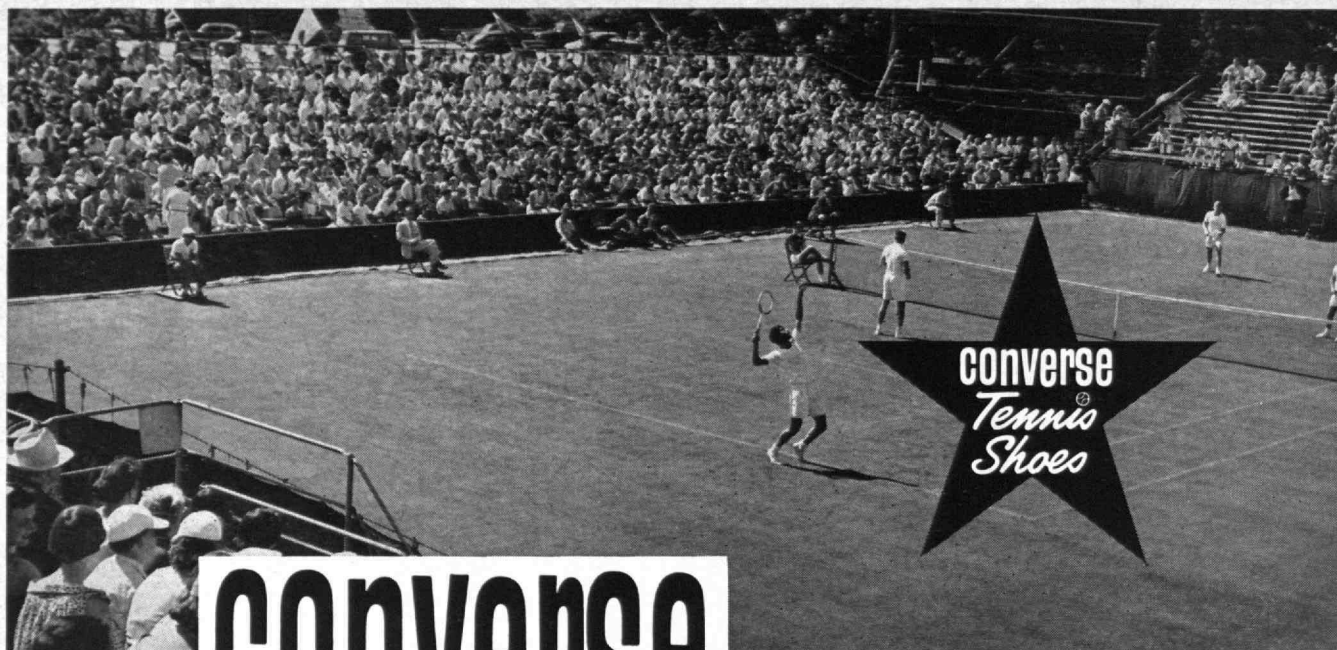


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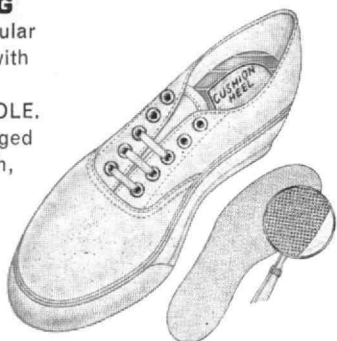


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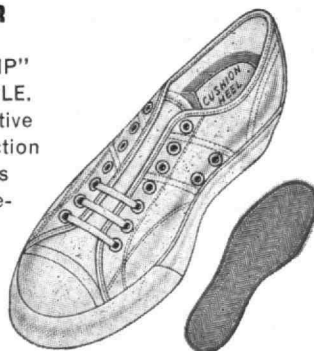
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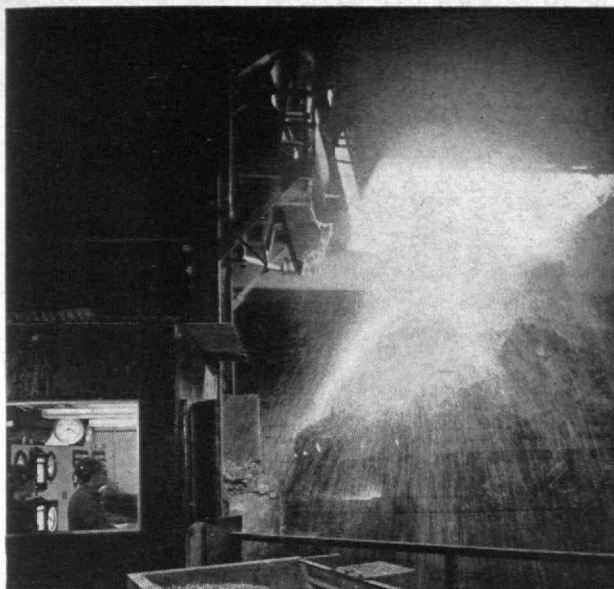


NET STAR

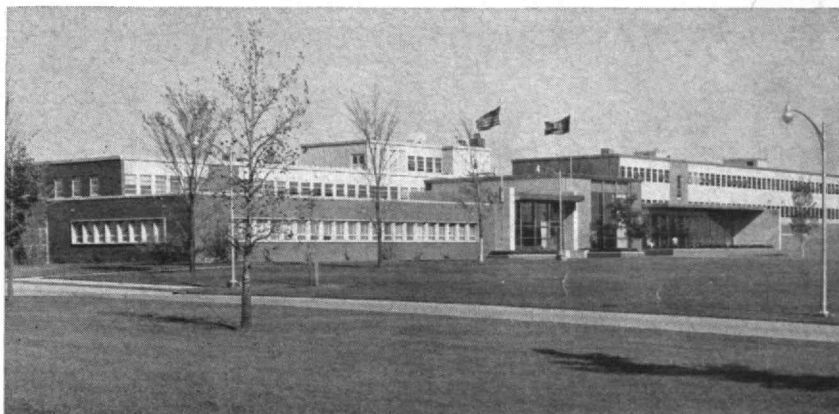
Lace-to-toe with "NO-SLIP" MOLDED SOLE. Delivers positive skidproof traction on all surfaces through angle-cut gripping edges. Men's sizes 4 to 14, Women's 4 to 10.



A. H. WECHSLER '21
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Clockwise, from lower left: 1. Solving complex metallurgical and mechanical processes electronically. 2. J&L helped pioneer the new basic oxygen furnace steelmaking process. 3. J&L Gateway Center headquarters. 4. Planning new Cleveland hot strip mill. 5. The Graham Research Laboratory.



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Jones & Laughlin Steel Corporation, one of the nation's largest steel producers, offers the liberal arts, business administration and technical college graduate the challenge he is looking for in the widely diversified and ever-expanding business of making and selling steel.

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J&L is growing, too: During this same period, J&L has spent over \$1 billion to expand and modernize equipment needed to produce new and better steels.

This results in a "new" Jones & Laughlin, with vastly improved raw material sources; new larger coke ovens

and blast furnaces; new steel-making processes; new primary rolling mills; and finishing, fabricating and warehousing facilities second to none.

This expansion and improvement is reflected by J&L's stronger market and competitive position. Jones & Laughlin is now in its greatest growth period in its century-plus history—a period when added emphasis is placed on the need for young men with trained minds and scientific skills.

Future Leaders Needed: J&L's planning for future success depends on its ability to develop young men for positions of responsibility and leadership. Many rewarding career opportunities with financial recognition and job satisfaction are now available.

For further data, write: Director, Organization Planning, Jones & Laughlin Steel Corporation, 3 Gateway Center, Pittsburgh, Pennsylvania 15230.



J&L and other steel producers identify the beauty, durability and quality of steel with this Steelmark symbol. Leading manufacturers of steel products also use it to label their quality products.

Jones & Laughlin Steel Corporation



Individuals Noteworthy

(Concluded from page 16)

Hans Mueller: 1900-1965

ONE of M.I.T.'s most famous teachers, Professor Hans Mueller, died at his Belmont home on June 10. Professor Mueller was born in Switzerland and received his degrees at the Eidgenossische Technische Hochschule in Zurich.

He came to M.I.T. as a research associate in the Department of Physics in 1925, became an assistant professor in 1928, and served the Institute continuously from then on except for the academic year 1937-1938 when he was a Guggenheim Fellow at the Cavendish Laboratory at Cambridge University.

His energy, wit, and flair for classroom dramatization endeared him to generations of students, and at one time or another he taught nearly every undergraduate subject offered by his Department. His most recent research was in optics, a field to which he made numerous significant contributions.

Mrs. Mueller, his daughter (Mrs. Agneta Domaszewicz) and two brothers survive him.

L. B. Chapman: 1886-1965

PROFESSOR of Marine Transportation and Marine Engineering at M.I.T. until 1952, Lawrence Boylston Chapman, '10, died in May at Princeton, Mass., where he had lived since retiring.

A native of Norwich, Conn., Professor Chapman was an engineer for the Electric Boat Company and other shipbuilders, and was on the faculties of the University of Maine and Lehigh University before returning to the Institute in 1925 as Associate Professor of Ship Operation and Marine Engineering. He organized Course XIII-C in Marine Transportation and was the author of many economic studies of ship operation, marine engineering, and marine transportation. He wrote *The Marine Power Plant* and was a member of The Society of Naval Architects and Marine Engineers.

After his retirement, Professor Chapman devoted much time to the study of birds and became an authority on the tree swallow. He was chairman of the advisory committee for Wachusett Meadows, a bird sanctuary; had been president of the

Northeastern Bird Banding Society, and was a member of the American Ornithologists Union.

Surviving are his wife, Mrs. Louise B. Tarbell Chapman; two daughters, Mrs. Anita Woodward of Princeton and Mrs. Lois Tarby of Seymour, Conn.; a brother, Charles F. Chapman of Essex, Conn., and five grandchildren. A son, Charles E. Chapman, died in World War II.

Robert P. Russell: 1898-1965

A RECIPIENT of many honors for his wartime work and services to chemistry, Robert Price Russell, '22, died on May 28 at his home in Lisbon, N.H. He was assistant professor of chemical engineering and assistant director of the Research Laboratory of Applied Chemistry at M.I.T. from 1925 to 1927.

Dr. Russell was formerly president of the Standard Oil Development Company, and at the time of his death was chairman of the board of trustees of the IRI Research Institute, Inc., in New York, a consultant to W. R. Grace and Company, and a director of the Nashua Corporation, in Nashua, N.H.

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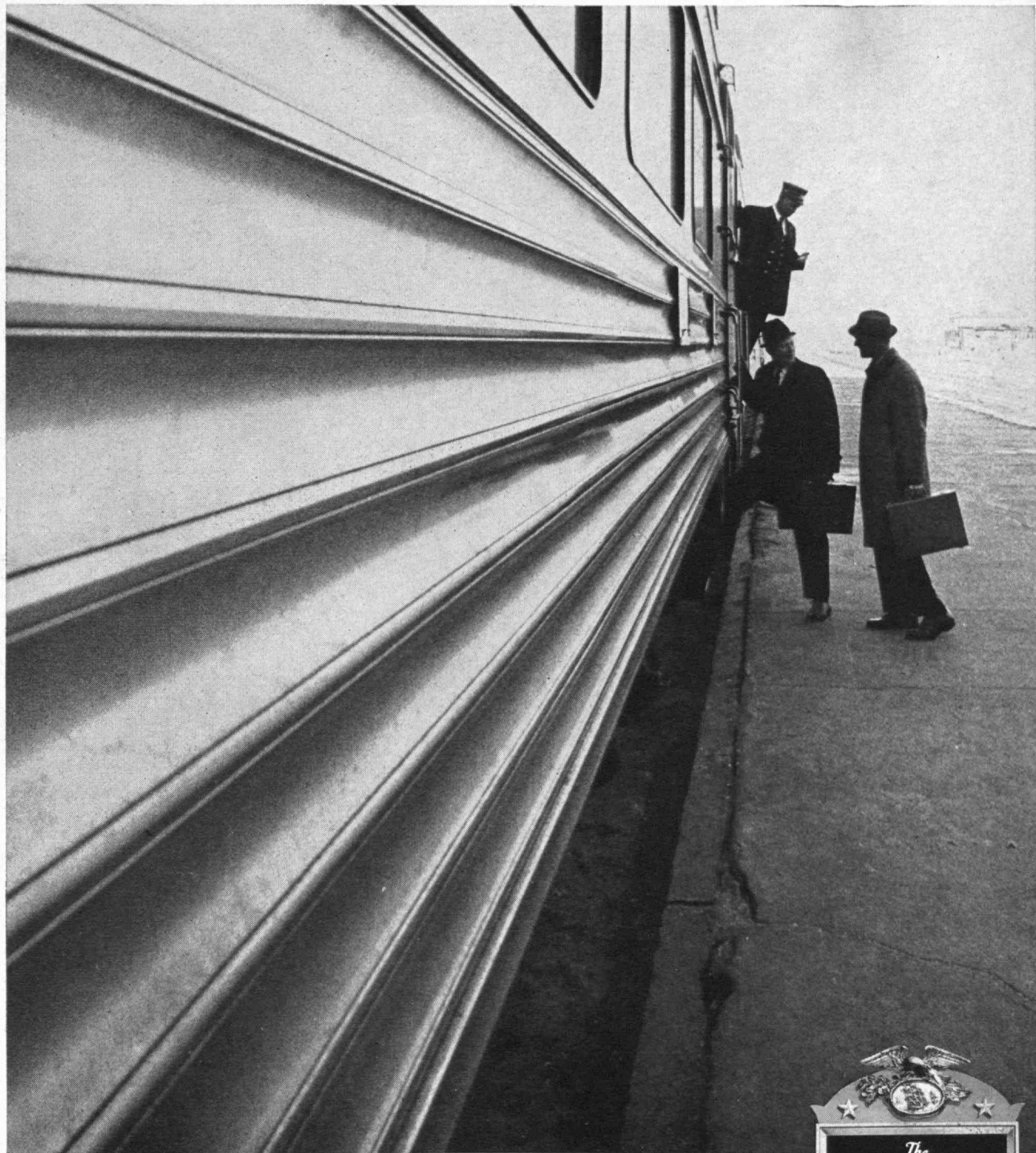
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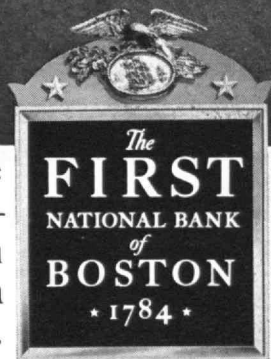
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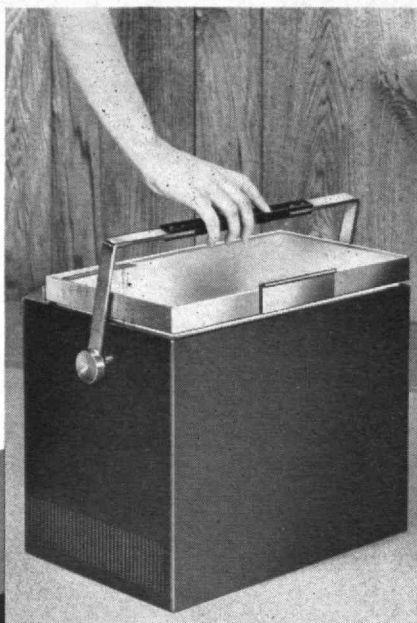


The best time to get expert help with any business venture is right at the beginning. Call in The First Team first — the officers and staff of The First National Bank of Boston and its allied Old Colony Trust Company. You'll find that even the most complex financial problems usually meet their match.

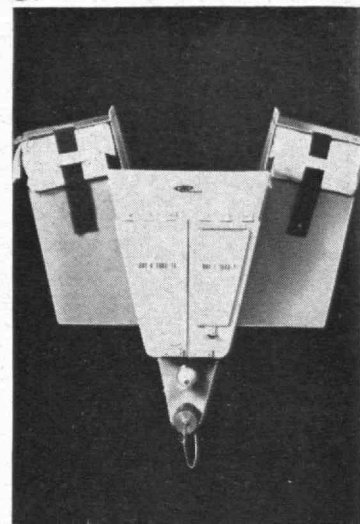




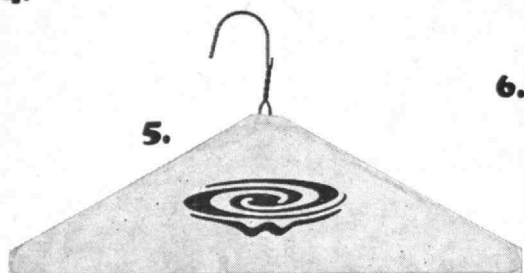
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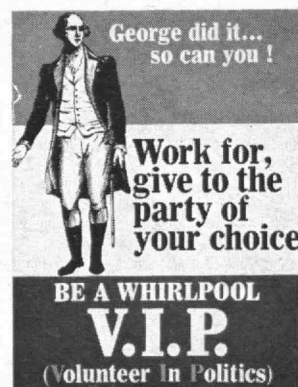
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Say "Whirlpool" and most people think of clothes washers and dryers. Or refrigerators, ranges or dishwashers. And we're glad they do, because these products tell an important part of the Whirlpool story. But not all of it. Right now, at Whirlpool, the rest of the story is being told by a wide variety of products, some of them far removed from the field of home appliances, and a group of projects underway not only in the United States, but in foreign lands as well. Here are just a few of them:

1. A Whirlpool Foundation Technical Institute for the training of the technicians so much in demand by all industry. It's proven so successful that recently a like institute was established in Medellin, Colombia, with Whirlpool's assistance.

2. A new kind of thermo-electric refrigerator as small as a picnic cooler. Easily carried, it can be plugged into any 110-V outlet—even operate from a 12-V car battery.

3. Whirlpool designed and developed food and waste storage system for Project Gemini. Unit was used by two men on 4 day orbital mission.

4. Specialized farm products including bulk milk coolers that surpass the rigid standards of the Pure Milk Association—a

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6. A whole new family of IceMagic* automatic ice makers for restaurants, hospitals, motels, and hotels—different sizes, different shapes, different capacities.

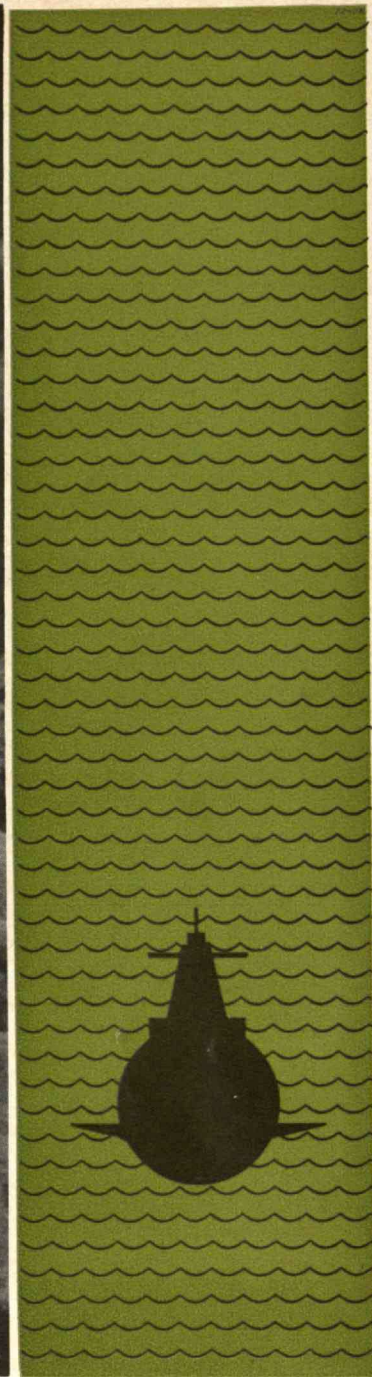
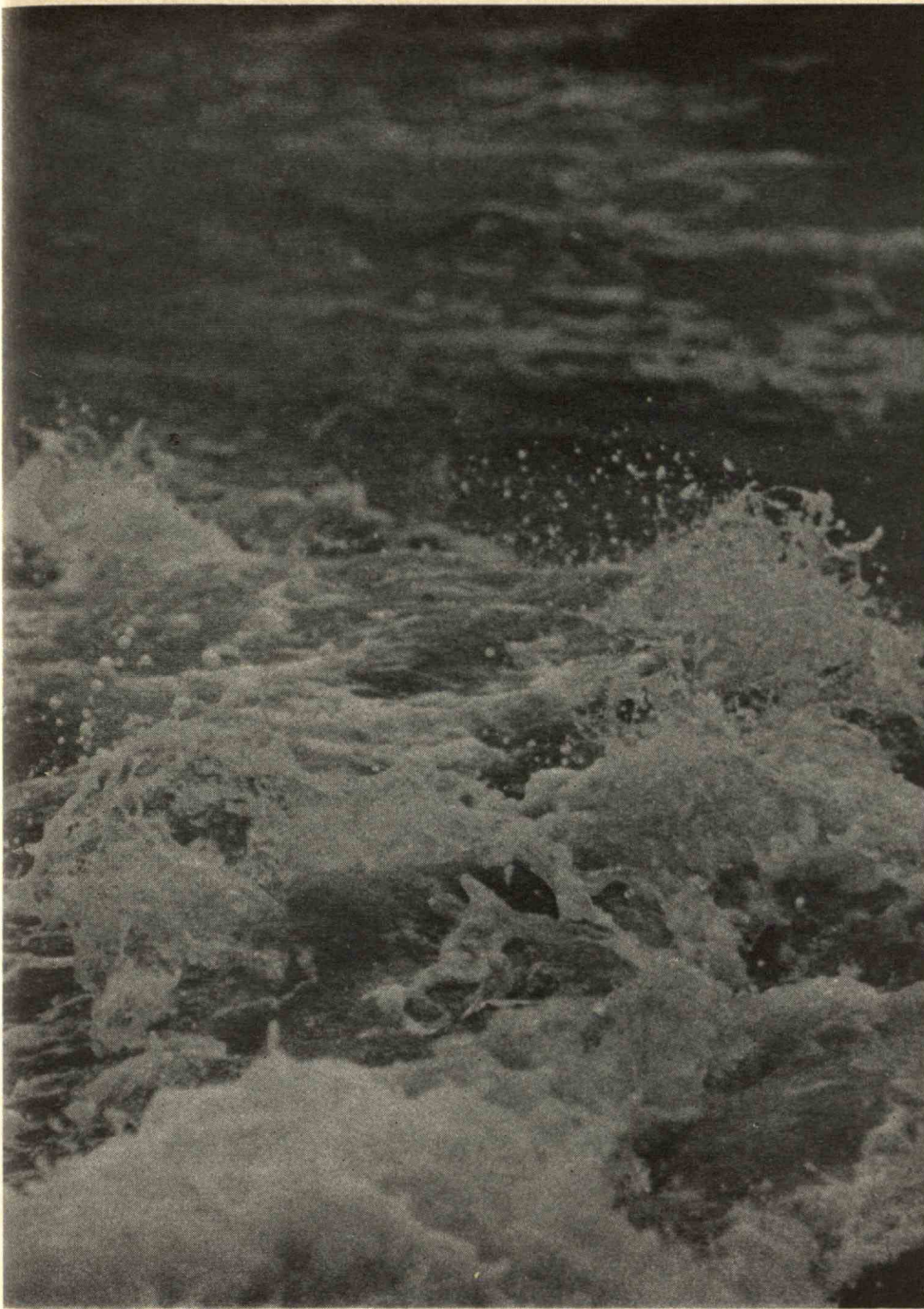
7. A political educational program designed to encourage Whirlpool employees to donate their time, money, or both to the party of their choice.

Tomorrow there will be new chapters in the Whirlpool story, written by those new products brought about through diversification within our capabilities, expanded by those projects stimulating the exercise of good citizenry.

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*Tmk.


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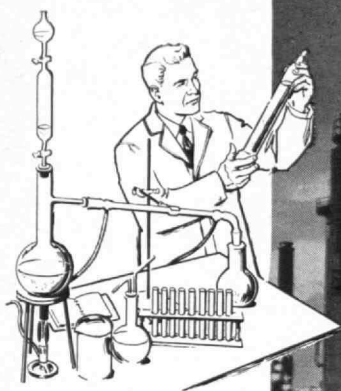
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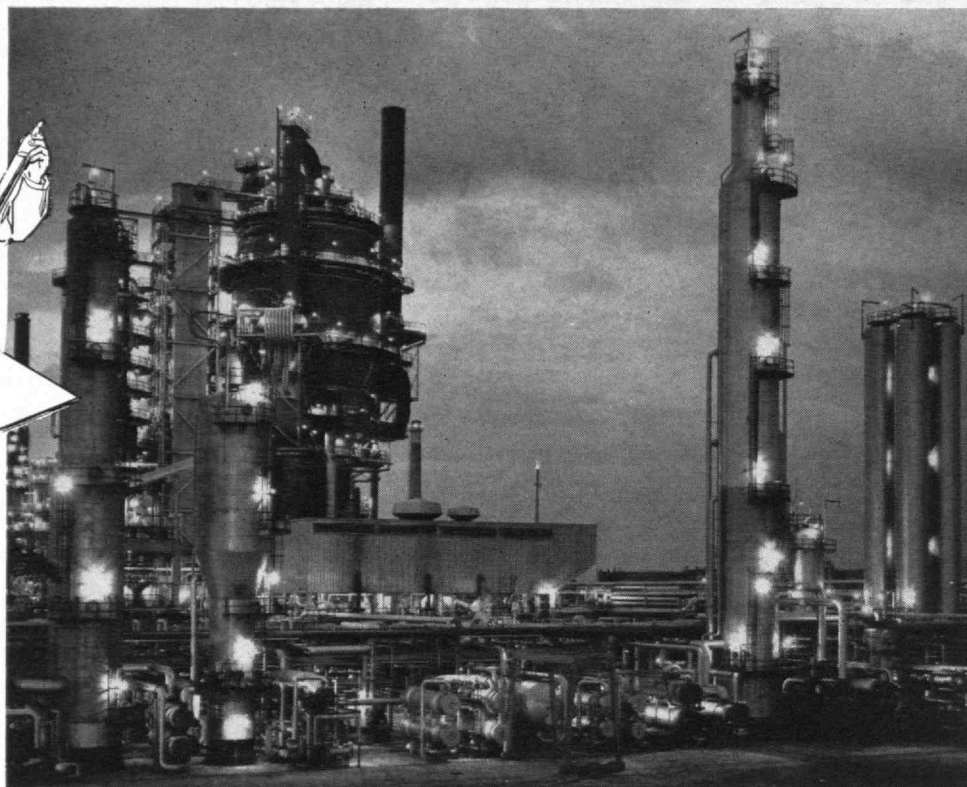
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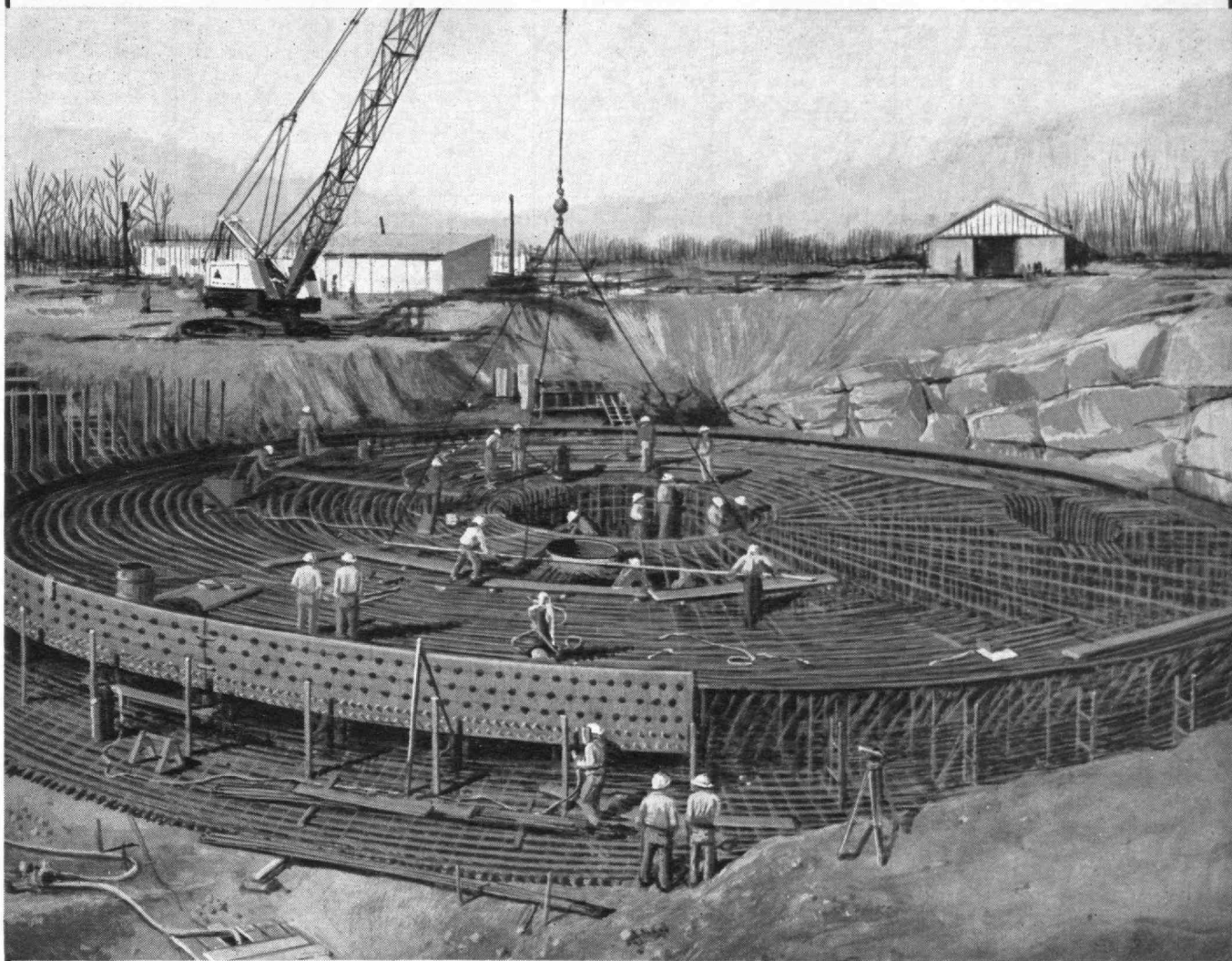
R. H. DAVIS, 1931

J. FAIRFIELD, 1931

F. T. TOWLE, 1908



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A Stone & Webster Nuclear Progress Report: NEW CONCEPT IN CONNECTICUT

Stone & Webster Engineering Corporation began design work and site clearing in early 1964 for a 500,000 kw nuclear-powered generating station at Haddam Neck, Conn. for the Connecticut Yankee Atomic Power Company. Following a design developed by Stone & Webster, construction has advanced on schedule on the reinforced concrete pressure vessel for reactor containment. An original Stone & Webster concept, the vessel employs 2¼ inch welded steel reinforcing bars in a concrete mat 9 feet thick, with walls 4½ feet thick, over a ⅜ inch gas tight steel liner. The vessel will be 170

feet above grade and will require 29,000 cubic yards of concrete placed around 6,100 tons of reinforcing steel.

The plant will be operating commercially by the end of 1967 and should not only prove to be economically competitive with new oil or coal-fired power plants of comparable size in New England, but a significant advance in nuclear power plant design for more densely populated areas.

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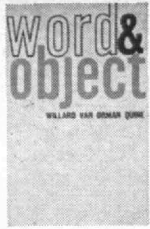
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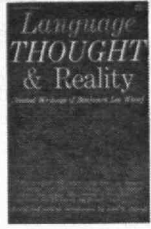
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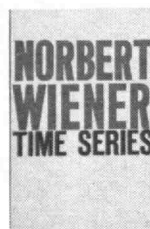
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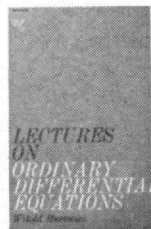
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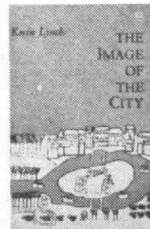
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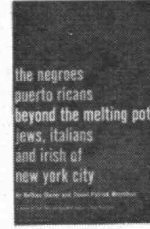
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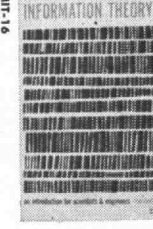


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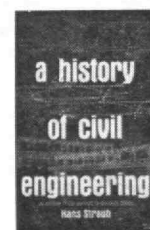


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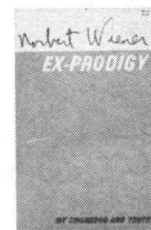
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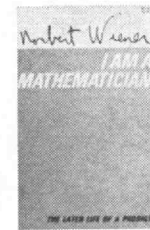
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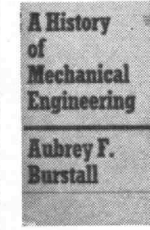
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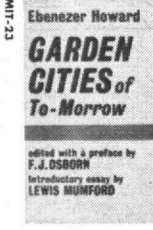
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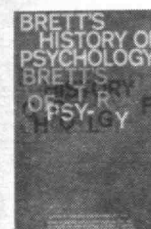
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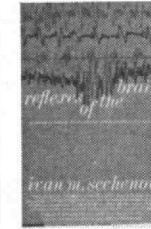
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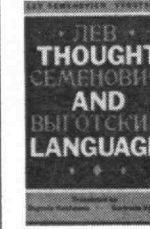
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The M.I.T. Commencement Address

Given at the ceremony in the Rockwell Cage when the Institute awarded degrees to 1,274 students

By President Julius A. Stratton, '23

FOR MANY MONTHS I have had some thoughts in mind that I have wanted to convey to you this morning. But over the past week or two, as I have read newspaper accounts of one commencement address after another, there have been moments when I was sorely tempted to abandon the whole project. I have, in fact, felt very much like the final speaker at a banquet who listens with apprehension, wondering whether at the end, there will be anything left for him to say.

Since last September a series of incidents—one might almost call it an epidemic—on and off our university campuses has absorbed the interest of the American public. College presidents, in particular, have followed them with spellbound attention.

In both the North and South, students—sometimes as individuals and more often in organized groups—have taken an active part in public demonstrations on behalf of civil liberties. Student pickets have massed before the White House to protest a variety of causes. In one place or another they have demonstrated for free speech and against academic decisions on tenure and promotion. Not long ago they gathered in Pennsylvania to define the role of the faculty and the administration in the student-run university of the future. And then in that most novel innovation, the teach-in, students and faculty have joined forces to examine and discuss American foreign policy as it is revealed through our actions abroad.

All this—as you well know—has opened the floodgates of response and commentary. We have been treated to an impressive array of interpretations. Responsibility has been placed here or there, according to the sympathies or bias of the observers. But the force and depth of reaction have only become truly evident on the commencement platforms of the last few days.

One might almost conclude that everything possible has already been said. Yet I have decided to hold fast to my original subject, because it seems to me that it would be impossible in this June of 1965 to choose a topic more relevant to the interests of all of us who are here today. Moreover, these issues will not be disposed

of quickly. The deeper we examine them, the more we come upon questions that are hard to answer. The views I express, of course, are personal, but inevitably the perspective with which I see the events of the day is influenced by the particular character and environment of our own institution.

We are, in fact, in the presence of movements involving more than students which reflect a change in mood on the part of many people throughout the country. However complex each particular incident may be, and however greatly it may be shaped by local circumstances, there run through each of them a few recurring themes. One relates to the right of personal freedom—hardly a new idea in itself.

The other evening, as I was casting about for an opening to these remarks, my Radcliffe daughter suggested that I have a look at a passage from Matthew Arnold. It is taken from an essay on *Culture and Anarchy* and is called "Doing as One Likes." Freedom, says Arnold, is "one of those things which we thus worship in itself, without enough regarding the ends for which freedom is to be desired. . . . Our prevalent notion is . . . that it is a most happy and important thing for a man merely to be able to do as he likes. On what he is to do when he is thus free to do as he likes, we do not lay so much stress" . . . And then Arnold goes on to say, ". . . this and that man, and this and that body of men, all over the country, are beginning to assert and put in practice an Englishman's right to do what he likes; his right to march where he likes, meet where he likes, enter where he likes, hoot as he likes, threaten as he likes, smash as he likes . . . The moment it is plainly put before us that a man is asserting his personal liberty, we are half disarmed; because we are believers in freedom."

These words were written in England 97 years ago. They suggest that perhaps times have not changed so much as we think.

Our own current preoccupation with freedom of speech, with individual rights, and personal liberties, extends, as I remarked earlier, far beyond the limits of the

university campus. It is reflected in the views of those who assert that anything may be written in the name of literature, that anything may be presented on the stage or shown on the screen in the name of theater, and who insist that every restraint that might be imposed by good taste, if not of law, is an intolerable censorship.

We hear time and again that an individual has a right to do anything he wishes provided only, as they say, that "it doesn't hurt anyone else." I am wholly conscious of how many people today defend precisely such a position. But the question remains unresolved as to who shall judge whether an individual action—such as an indulgence in drugs, for example, may harm directly or subtly those around us.

Our country has been founded on the rock of personal liberties, and our Constitution was framed to insure them. Yet I cannot escape the conclusion that dangerous trends are appearing in the manner in which we interpret the intent as well as the content of our constitutional principles. Even our highest courts, in their concern for the technical rights of the accused, seem from time to time to forget that they are under obligation also to protect the rights of the victim and the safety of the public.

The very concept of *complete* individual freedom is in fact a fiction. It has never really existed. Primitive man in the forest lived without statutory law, but his freedom was threatened and limited on all sides by predatory beasts and human enemies. He gave up a measure of that freedom for the protection of an organized society. The whole historical progress of civilization has come about through the step-by-step reconciliation of conflicting personal desires and the concession of certain individual freedoms. Civil and moral law are anything but a set of absolutes. They represent a succession of compromises for the sake of creating an orderly world, wherein a degree of personal freedom must be yielded in the interests of a larger and more permanent freedom for all. Codes of ethics, the statutes for the state or nation, the regulations of a university—all have developed out of this common need. They are more than often arbitrary; they are frequently in part illogical; they can rarely be defended on the grounds of any supreme absolute verities. But they are the framework which enables men and women to move in peace, to work in reasonable harmony. They represent the concessions we make not only to the body of civil law, but to the common law of good taste and moral judgments. They are never perfect, and we should constantly strive to improve them and to adapt them to changing times. But a belief that each one of us individually is free to act at any time in accordance with his own personal interpretation of whether a rule or law or a canon of taste is right or wrong can lead only to one consequence—to an ultimately chaotic and disorganized society.

In these comments on the limits of personal freedom I have manifestly been speaking of views and trends that are by no means confined to the youth of our country. Let me turn now to a second idea, which comes very much closer, I believe, to the present college gen-

eration. I shall call it the need for a constructive purpose.

There are, as you know, wide disagreements about the basic causes that underlie the commotion and conflict of the past months. To some observers they represent clearly an expression of idealism—and certainly there has been ample evidence of individual commitment, of the development of social awareness, of a desire to serve. But others see only restlessness, irresponsibility, an absence of concrete goals, a resort to action merely for the sake of action. And again there is abundant evidence of individual instances to support such a conclusion.

But wholly apart from such judgments, these varied movements, taken in their entirety, present a most serious issue to all Americans. We have been bitterly reminded this year of social inequities, of slums, and of poverty. And yet, on the other hand, no country in history has achieved our stage of technical progress, of material prosperity, of mounting wealth.

Many a historian has asked how long a society can survive its own affluence, can continue the expansion and deepening of its material life, and still maintain the sense of unity, of cohesion, of purpose which develops in periods of common striving. To me the hope for an affirmative answer to that question lies in our ability to capture the imagination of youth, to stimulate idealism, and to offer constructive goals. I am not wholly persuaded that this challenge can be successfully accomplished by diffuse projects and random actions alone.

The problem was clearly posed some 60 years ago by William James in an extraordinary address entitled "The Moral Equivalent of War." The burden of James's argument was that from time immemorial, great wars have served the purpose of galvanizing youth into action, of creating moments of total national unity and direction. William James, you may remember, was an eloquent pacifist, but he acknowledged that wars do result in a national commitment of energies and resources toward a definite goal. He contended that in our efforts to do away with war for all time, we must find some equivalent to engage the forces of a nation in a great constructive cause.

Unhappily, no one has as yet come upon such a solution. Perhaps the nearest approximation on a modest scale is the Peace Corps. The immediate and extraordinary response to that plan—and its success, contrary to the expectations of many of us—clearly demonstrates the genuine need and the validity of James's idea.

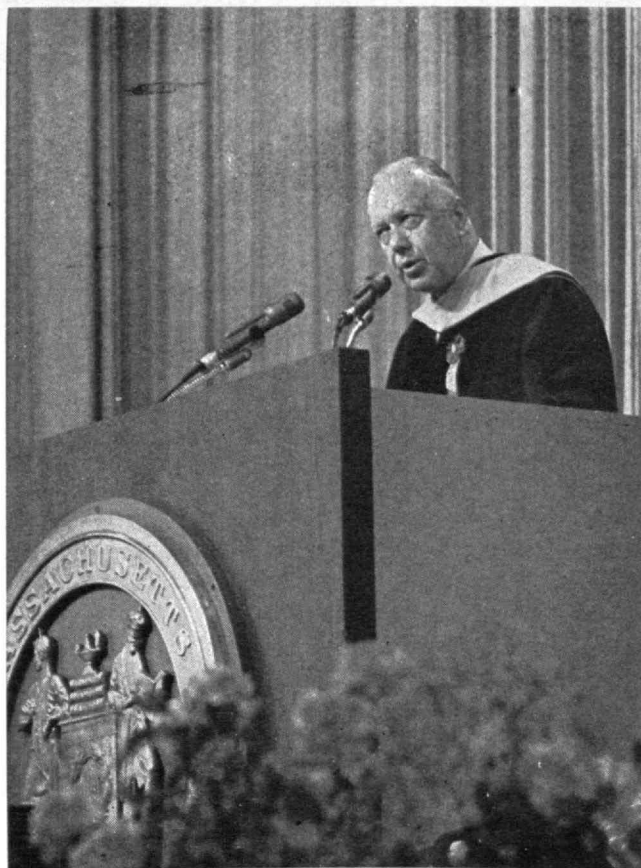
As I have continued to reflect upon these problems, I find it increasingly difficult to reconcile this new restless spirit of youth with the intent or aims of higher education. For Americans education has been our panacea—the ultimate cure for every ill. Generation after generation we have enlarged the base of public education, and we can be proud of what has been achieved. From an expected minimum of elementary school we have moved to high school, and now an attendance at college is taken more and more for granted. Is it not possible that we have concentrated so much on the idea of education

as a good in itself that we have not thought enough about the ends to which education should lead? Enrollments are mounting year by year, but as one surveys the national scene broadly, one discerns that many undergraduates fail to develop a clear plan or educational purpose throughout their entire four years. I recognize, of course, the importance of college as a time to inquire into what the world of learning has to offer, and I recognize, too, that one shouldn't be too precipitate in the choice of a career. Nonetheless—and very likely I am reflecting my M.I.T. bias—it does seem to me that there is the need for some focus, for a sense of moving toward some objective that should become ever more clearly defined.

Symptomatic of the present trend, I believe, is the increase in the numbers of college students who go on to graduate study without any serious commitment to some professional or authentic scholarly interest. It is just this deferral of commitment, this absence of an emerging purpose that leads to a sense of futility and frustration.

And so finally these thoughts on commitment and purpose bring me back to you who are graduating today. As I noted at the outset, your views and mine—students and faculty—are inevitably influenced in one way or another by the special character of M.I.T. This has been very apparent in the many discussions that have taken place about these matters on our campus during the past winter and spring. We have heard one opinion that our students tend as a whole to be insensitive to the political and social problems of the day. With this statement comes the call to a greater involvement in social action—notwithstanding the fact that M.I.T. students have contributed constructively in many ways to community projects. There is an opposite, and I believe predominant, view that the most important obligation of a student at M.I.T. is to take the fullest advantage possible of the resources available to him here and now and to direct his efforts chiefly toward the goal of a professional career. It seems to me that this is a choice which each individual must make for himself and that he must be respected in his decision. In essence it is a decision on fruitful use of time and a balancing of present and later values—a weighing of contributions that one may make now, at the expense of his primary objectives, against later, perhaps more effective contributions, with the added power of professional competence.

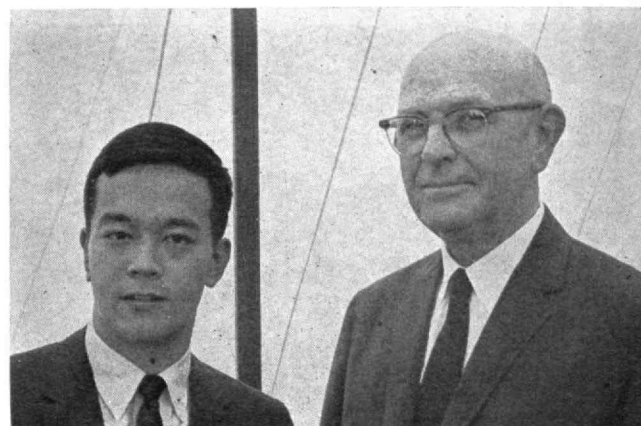
The betterment of our society will come about only through the combined efforts of many kinds of people. In this common effort, by the very nature of the modern world, you know that science and technology are going to have a dominant part to play. There can be no doubt whatsoever of your ultimate obligation—as scientists and engineers, as architects and economists and managers—to accept your share of responsibility for the social and political life of your country. And in my own mind there is no doubt whatsoever that you who today become Alumni of M.I.T. are indeed conscious of that responsibility and that by your achievements you will make us proud.



Dr. Stratton: "By your achievements . . . make us proud."



Marchers: Samuel Groves, '34, and Ascher Shapiro, '38.



Spokesmen: Richard Tsien, '65, and Marshall Dalton, '15.

1,361 Degrees From M.I.T.

*A record group is graduated
and two get Goodwin medals*

MI.T.'S CLASS OF 1965 entered the great society from a changing institution in the traditional way. But this year more degrees were awarded than at any previous commencement ceremony and two graduate students, rather than one, received Goodwin medals for conspicuously effective teaching.

June 11 was an ideal day. Proud mothers, shy fathers, pretty girls, professors, and Alumni mingled with the graduates sharing what Richard Win-yu Tsien, the Class President, called "a strange but wonderful feeling." Men of the Class of 1915 intensified that feeling by springing to their feet at the luncheon which followed the formalities and giving a loud cheer for Tech.

Many of the 1,274 graduates received two degrees and one received three. The total, 1,361, included 163 doctorate degrees, 70 advanced engineering degrees, and 430 master's degrees. The Class President was the sixth member of his family to receive an M.I.T. diploma, and the son of Dean Gordon S. Brown, '31, was among those whom he introduced to receive a bachelor's degree.

Honored guests included a record



Class officers were marshals. From left are Richard Win-yu Tsien, William Christie Samuels, Rodman Austin McLeod, and James Alton Wolf.

number of members of the 50-year class and their spokesman, Marshall B. Dalton, noted that it was the 100th anniversary of the meeting of the Institute's first classes in Boston.

Chairman James R. Killian, Jr., '26, of the M.I.T. Corporation, presided at the ceremony in the Rockwell Cage; President Donald Fell Carpenter, '22, of the Alumni Association, carried the mace; the brass choir played, and the Reverend John A. Russell, '46, Methodist chaplain, gave the invocation. The only address was President Stratton's, and he personally greeted each graduate.

Dean Harold Locke Hazen, '24, of the Graduate School, presented Goodwin medals and checks for conspicuously effective teaching to Barbara C. Hall and Frank E. Perkins, '55. Miss Hall had started a class in "Mathematics Backgrounds in Communications Sciences" which will become a regular part of the linguistics curriculum, and written a textbook which will soon be published. Mr. Perkins had distin-

guished himself by teaching regular courses in fluid dynamics and computer applications to engineering problems, and by giving a series of lectures on instrumentation.

Commencement events began as is customary with exercises for the 38 cadets and midshipmen in R.O.T.C. programs who are receiving commissions as officers in the military services. Lt. Gen. W. Austin Davis, Vice Commander of the Air Force Systems Command, addressed them on "Education, Leadership, and Tomorrow's World." Maj. Gen. James McCormack, '37, USAF (Ret.), presided at this gathering in Kresge Auditorium, and Lt. Col. James W. Gilland, Capt. Harry M. Pugh, and Major Jack D. Alexander administered the oaths of office for, respectively, the Army, the Navy, and the Air Force.

On commencement eve, the Door-mat Singers, the Logarithms, and the Dave Brubeck quartet entertained at a final party.

Three thousand persons filled the Rockwell Cage the next morning when the academic procession entered, and hundreds more saw the proceedings on a large television screen in the Kresge Auditorium.

Mr. Dalton noted that the Great Court, in which luncheon was served after the ceremony, had been filled with construction workers when his class was graduated 50 years ago. The whole world has changed, he observed, but some things—including lead pencils—have not changed because men still need them, and he urged the Institute's new Alumni to become involved in the activities of their Alumni Association.



The Class of '15 cheered graduates, parents, professors—and photographers.

Our New View of Our Environment

*Alumni hear of advances on earth and in space;
the future is a question of cultural evolution*

FOR M.I.T.'S Alumni Day, June 14, the National Aeronautics and Space Administration rushed color films to Cambridge showing Major Edward White on a tether in space—and the world as he saw it. Despite repeated showings, these pictures evoked so much interest that the film was run again during the reception hour before the annual banquet.

"The World We Live In" was the topic of the afternoon program, conducted by Dean Jerome B. Wiesner of the School of Science, and Kresge Auditorium was well filled when four scholars gave their views of the earth, its seas, its atmosphere, and space.

The earth, Professor Patrick M. Hurley, '40, pointed out, is part of a solar system that is but one in a myriad. "We are a poppy in a field of poppies," he observed, and from this realization we have learned to discard the egocentricity of men in the centuries when the earth was thought of as the center of the universe.

Given similar physical conditions, biological systems will have evolved on many planets and "we are not unique." As a measure of such growth, he noted that four billion years was needed here for the development of "an organism that has intellect," but many planets are much older. Even if man were to eliminate himself by wars now, Professor Hurley said, other intelligent animals of earth could replace humans in about 10 million years.

Rest assured!

Biological evolution, he continued, is no longer important to man; "it becomes a question from now on of cultural evolution" and our concern should be with the diseases of culture. "I think that man has not yet

been created, but that he has only just begun to be created," he concluded. "Nature tells us that man's future is ahead of him . . . (but) we are just around the bend from the animals."

The oceans make the earth unique among the planets in our solar system, Professor William S. von Arx, '55, told the Alumni. The earth's oceans and its atmosphere cause it to shine with a blue light, and it is also remarkable in that it acts as a thermal regulator which permits most of its water to remain liquid. Understanding the seas of the world has advanced, he said, to the point where oceanographers now think of the earth's waters as a single "world ocean."

Professor John V. Harrington, '58, called the discoveries of the Van Allen radiation belts and the solar wind the two most significant ones in space to date. From them, he added, we have acquired better knowledge of the dangers that men face, effects on instrumentation, and the causes of many terrestrial phenomena.

Speaking of the earth's atmosphere, Thomas F. Malone, '46, Director of Research for the Travelers Insurance Company, said the gap between theory and reality is being closed rapidly. "We are beginning to be able to deal with the complex processes that control the great global wind systems that dictate our weather." This has been made possible by computers, and the development of mathematical models. Even so, he said, future atmospheric research will require vast amounts of data from all over the world and computers one hundred times as fast as present machines.



Alumni Day speakers on man's environment were (from the left) Drs. Hurley, Wiesner, Malone, Von Arx, and Harrington.

Alumni Give Record Sums

They greet two new honorary members and the new Association President in the Great Court

THE TENTS in the Great Court were filled on Alumni Day, June 14, and the Class of 1915 announced the largest gift to the M.I.T. ever made by a reunion class. It was a rainy day brightened by an abundance of heart-warming news:

► Alumni Fund Chairman D. Reid Weedon, Jr., '41, disclosed that, with two weeks remaining in the Fund's year, its record goal of \$1,500,000 had been exceeded already by \$70,000.

► The reunion gifts reported by the Classes of 1915, 1925, and 1940 totaled 2,729,974.

► President Julius A. Stratton, '23, outlined plans to improve the housing of M.I.T. undergraduates.

► Provost Charles H. Townes and Miles P. Cowen, Superintendent of Building Services, were welcomed into the M.I.T. Alumni Association as honorary members.

President Donald F. Carpenter, '22, presided at this gathering and presented a gavel to Samuel A. Groves, '34, who will succeed him as the Association's President. But before doing so, he introduced Franklin E. Penn,

'40, Frederick W. Greer, '25, and James B. Neal, '15, who announced the reunion gifts of their classes.

Mr. Penn said a record number of members of his class contributed \$225,338 during the last five years in a drive led by John L. Danforth.

Mr. Greer reported that the 40-year class had given \$426,232 in the five-year period, of which \$117,143 was contributed to the current year's Alumni Fund, and paid tribute to Mac Levine, reunion gift chairman, and Samuel R. Spiker, leadership gift chairman.

Mr. Neal announced that the 50-year class "from Boston Tech" had contributed \$2,078,404, of which \$758,904 was outright gifts and \$1,319,500 was deferred gifts as part of classmates' wills—and expressed confidence that M.I.T. will spend it with "prudence and wisdom for the benefit mankind."

Undergraduate Housing

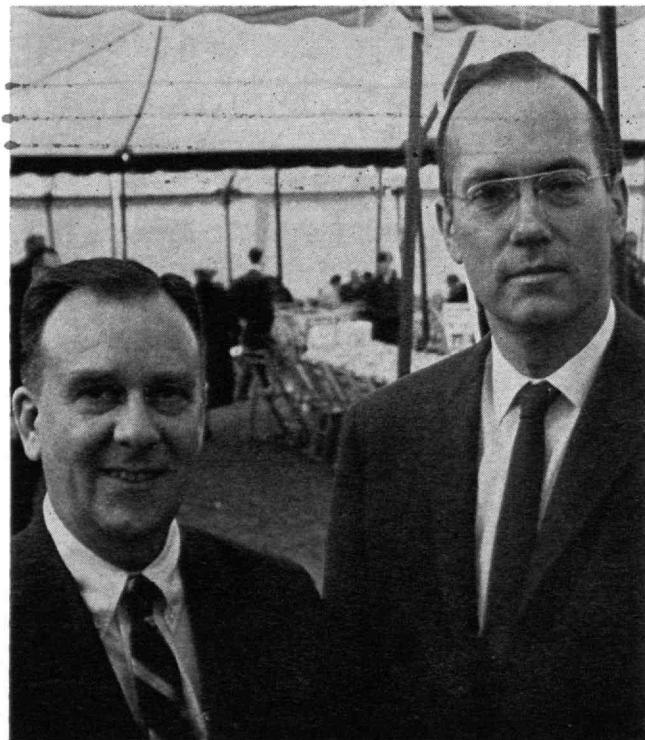
In gratefully acknowledging these reports, President Stratton spoke mainly of efforts to improve the environment of M.I.T. students.

Deficiencies in undergraduate housing cannot be ignored, he said, and the Institute now plans both to improve and to increase the capacity of its dormitories. Dean Pietro Belluschi of the School of Architecture and Planning, who retires this month, will undertake the design of a new house on Memorial Drive to accommodate about 300 students. The Class of 1965 pledged \$500 toward its construction and this will be called the Frederick G. Fassett, Jr., Fund in recognition of Dean Fassett's contributions to undergraduate life.

Dr. Stratton cited the strong recommendations made by faculty committees and the Corporation Visiting



Explorers' tools and findings intrigued visitors such as William T. Green, '40, and son on tours of campus.



Miles Cowen, building services superintendent, and Provost Charles H. Townes became honorary M.I.T. Alumni.

Committee on Student Affairs, and the recent establishment of an Independent Residence Development Fund (described by Marshall B. Dalton, '15, on page 45 of this issue of *The Review*). He spoke, too, of steps being taken to provide accommodations for married students and for members of the Faculty on or near the campus.

M.I.T. undergraduates should have "a total living experience," he said, that would enable them to benefit from free interchange of views with others, the rich diversity of interests and backgrounds represented by the community, and the variety of activities that the campus now offers.

"We still have a long way to go in creating the ideal environment that this institution ought to provide," he said. "Indeed, I think we fall short of the standards that we have set and maintained in our teaching and research. . . . The heart of our whole plan to create such a superb environment for undergraduate life is centered in the residential system." Conditions of housing can be made so attractive, "not from the point of view of luxury but through the opportunities for association and living in an environment of learning," he said, that students of their own free choice will want to live on the campus.

In conclusion, the President told how impressed he has been with "the quality of our undergraduates as individuals by the evidence of judgment, of responsibility, of fine qualities of leadership" that they have shown. "I don't believe for one moment that you need have any misgivings, that they will leave M.I.T. with a mastery only of some recondite theories of mathematics and unprepared to face the problems of the world," he assured the Alumni. "There is every reason to be proud of them

and to have confidence in them as the M.I.T. Alumni of the future."

Especially Honored Persons

Chairman James R. Killian, Jr., '26, of the Corporation, spoke of the generous support and creative ideas of Alfred P. Sloan, Jr., '95, who observed his 90th birthday in May, and announced that part of the campus would be given Mr. Sloan's name. Later in the day, at a ceremony held indoors because of the weather, Graduate House was renamed to honor Associate Professor, Emeritus, Avery Allen Ashdown, '24.

One of the M.I.T. Alumni Association's new honorary members, Provost Townes, is a noted physicist and Nobel laureate. The other, Mr. Cowen, came to M.I.T. to join the Radiation Laboratory staff in 1942, and since 1946 has been one of the men behind the scenes responsible for the success of student and alumni meetings, seminars, reunion, and other campus events.

For many, Alumni Day began with trips to the roof of the new Cecil and Ida Green building and pauses to see educational films. About 1,600 persons attended the luncheon in the Great Court, and 1,200 were at the banquet in Rockwell Cage. To end the day, Arthur Fiedler conducted the Boston Pops orchestra in a concert concluded with *Sons of M.I.T.*

Ralph H. Davis, '31, with Francis M. Mead, '29, headed the Alumni Day committees, which had as chairmen William Baumrucker, Jr., '29, Philip H. Peters, '37, Wolcott A. Hokanson, Charles H. Spaulding, '51, Robert W. Forster, '35, John T. Fitch '52, Arthur L. Bryant, '44, Mrs. Kenneth R. Wadleigh, and Claude F. Machen, '31.



Reunion gifts were reported by (from left) James B. Neal, '15, Franklin E. Penn, '40, and Frederick W. Greer, '25,

at Alumni Day luncheon. A record number represented the 50-year class and they reported record reunion gifts.

The Trend of Affairs

M.I.T. Students Then and Now, As Seen by the President

IN HIS REPORT this year to the M.I.T. Corporation, copies of which will be sent to all Alumni, President Julius A. Stratton, '23, contrasted the students of today and those of 40 years ago.

The scholastic preparation of present undergraduates has been vastly broadened and deepened, he said. "Paced by the mounting scores of College Board examinations, they find themselves caught up in a bitterly competitive system—a kind of competition for higher education that most Europeans have long taken for granted but which is rather new to Americans."

To illustrate the pressures and problems of present students and to demonstrate "the dramatic developments that are affecting the intellectual character of this institution," Dr. Stratton sketched a profile of his Class of 1923. In those years, he said, "our preoccupation with basic science and original research was in fact minimal," the energy and resources of the Institute were focused almost wholly on engineering, and only 15 undergraduates majored in physics. These circumstances reflected "the still rather rudimentary condition of basic science in the United States at the time" and M.I.T. "was simply responding to the temper and needs of the time."

Entrance requirements in mathematics then were algebra, plane and solid geometry, and trigonometry, and and it was the last that reflected the more rigorous stand-

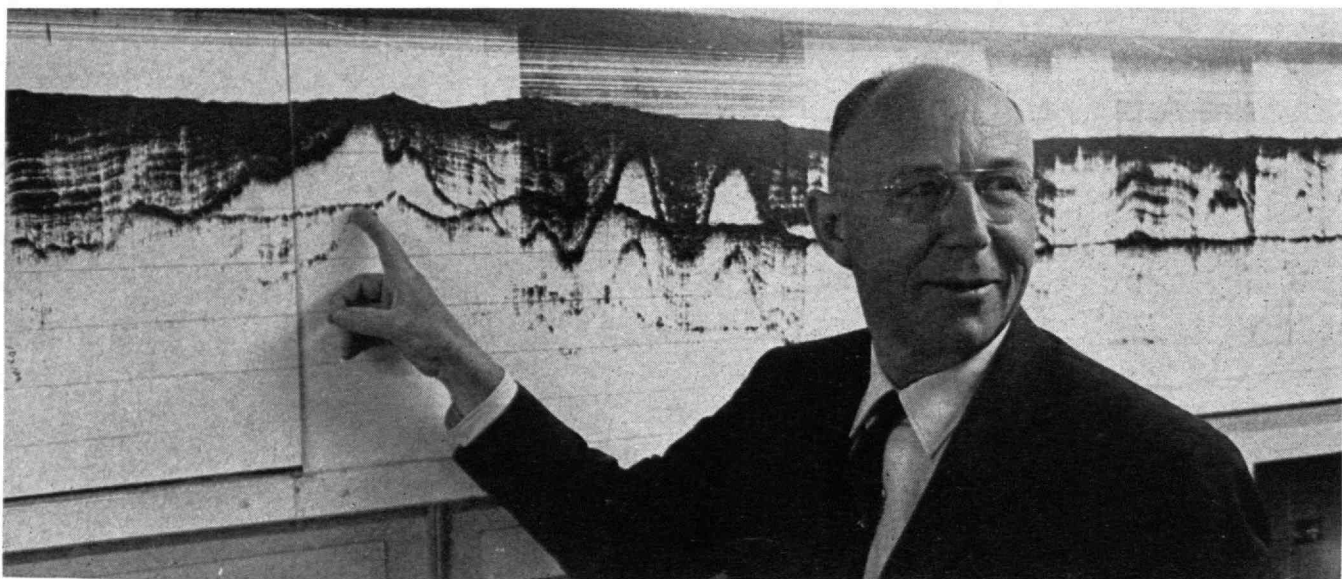
ards of M.I.T., Dr. Stratton wrote. The Institute was also one of the few institutions in the country that required physics, but "by comparison with the standards of European schools we were given no more than a highly elementary exposition of translatory and rotatory motion, of hydrostatics and hydraulics, and of the basic ideas of elasticity."

Since then, "the cumulative influence of President Compton's views, the experiences of the Second World War, and the emergence of science and engineering as primary forces in the reshaping of the social, economic, and political life of our country have in the end resulted in a completely revolutionary transformation."

In the Class of 1968, "no less than 287 achieved a score of 800 on the Advanced Mathematics Test of the C.E.E.B.," 268 received credit for the first term of calculus, and the average freshman was above the 99th centile level in mathematical aptitude, Dr. Stratton noted. Verbal aptitude also is increasing and "year by year the responsibility of distinguishing among these candidates becomes agonizingly more difficult."

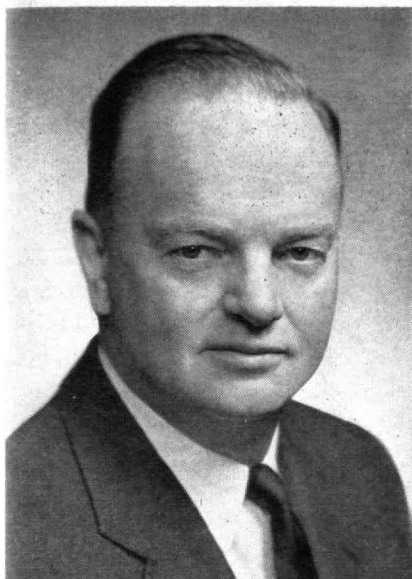
Despite their uniformly high achievement on "objective" tests, students are coming to M.I.T. with greatly varying degrees of preparation. "Moreover, some are motivated from the outset toward engineering or mathematical science; many others toward architecture, a social science, or management," he wrote.

"It is imperative that by some manner of means we also encourage undergraduates whose talents weigh more heavily toward the experimental and the sense of design," he said. Thus, it has become increasingly difficult to reconcile rigid course requirements with the multitude of developments in the sciences and engineering, and "we can hardly hope to accommodate this diversity in talents, needs, and interests without some added degree of flexibility in the curriculum, some larger latitude of choice for the undergraduate," Dr. Stratton said.



A MOUNTAIN, beneath 40 feet of water and the mud of Boston Harbor, was discovered recently by Profes-

sor H. E. Edgerton, '27. He showed this picture of it on Alumni Day and said he will name it "Mount M.I.T."



William B. Murphy



Laurance S. Rockefeller



Robert H. Winters, '33

Members of the M.I.T. Corporation

CHAIRMAN James R. Killian, Jr., '26, has announced the election of three term members as life members of the M.I.T. Corporation and the election of six others to term membership.

Those who have become life members are:

William B. Murphy, President of the Campbell Soup Company and chairman of the Business Advisory Council of the Department of Commerce. He was graduated from the University of Wisconsin in 1928.

Laurance S. Rockefeller, President of Rockefeller Brothers Fund, Inc., and chairman of Rockefeller Center, Inc., Memorial Sloan-Kettering Cancer Center, and the New York State Council of Parks. He was graduated from Princeton in 1932.

Robert H. Winters, '33, President of the Rio Tinto Mining Company of Canada Limited, and chairman of the board of Rio Algom Mines Limited, British Newfoundland Corporation, and Hamilton Falls Power Corporation. Mr. Winters is also president of Preston Mines Limited, a member of the Privy Council of Canada, and a former president of the M.I.T. Alumni Association.

The newly elected term members of the Corporation are:

John C. Haas, '42, of Villanova, Pa. He is executive vice-president, a director, and vice-chairman of the board of Rohm & Haas Company. He came to M.I.T. with an A.B. degree from Amherst College.

Douglas M. Knight, of Durham, N.C. Dr. Knight is president of Duke University, was formerly president of Lawrence College, and received A.B., M.A., and Ph.D. degrees from Yale University in 1942, 1944, and 1946, respectively.

Dr. George W. Thorn of Cambridge, Mass. He is Hersey Professor at the Harvard Medical School and Physician-in-Chief of Peter Bent Brigham Hospital. He attended the College of Wooster (Ohio) and received his M.D. degree from the University of Buffalo.

William S. Brewster, '39, of Plymouth, Mass. He is president and a director of United Shoe Machinery Corporation, and was graduated from the Advanced Management Program of the Harvard Business School in 1959.

Dayton H. Clewell, '33, of Darien, Conn. He is senior vice-president of Socony Mobil Oil Company, Inc., and received his Ph.D. degree from M.I.T. in 1936 after receiving his S.B. in 1933.

Alfred E. Perlman, '23, of Mamaroneck, N.Y. He is president and a director of the New York Central System and chairman of the board of the American Heritage Foundation. Mr. Perlman did graduate work at Harvard after receiving his M.I.T. degree.

Mr. Brewster, Mr. Clewell, and Mr. Perlman will be alumni term members; Mr. Winters has been an alumni term member since 1960.

Materials Symposium

ON THE occasion of the dedication of the Center for Materials Science and Engineering a symposium will be held at M.I.T. next September 30 and October 1. Professor Robert A. Smith, Director of the Center, will preside, Provost Charles H. Townes will welcome the guests, and they will be addressed by William Shockley, '36, President of the Shockley Transistor Company, and Harold Brown, Director of Defense Research and Engineering, U.S. Department of Defense. The principal speaker at the dedication on October 1 will be William O. Baker, Vice-president—Research, Bell Telephone Laboratories.

Various aspects of materials science and engineering will be described by Professors George B. Benedek, David P. Shoemaker, Clifford G. Shull, Benjamin L. Averbach, '47, Arthur R. von Hippel, John C. Slater, George W. Pratt, Jr., '49, Benjamin Lax, '49, Nicholas J. Grant, '44, Morris Cohen, '33, W. David Kingery, '48, Harry C. Gatos, '50, John Wulff, and Robert H. Rediker, '47, of Lincoln Laboratory.

Outlook on Man's Future

WHAT problems for mankind will science create or solve? Next September 13, James R. Killian, Jr., '26, Chairman of the M.I.T. Corporation, will put this question to a panel of scholars that will include Dean Emeritus John E. Burchard, '23, Vannevar Bush, '16, Professors Milton Katz, Charles P. Kindleberger and William S. von Arx, '55, and Dean Jerome B. Wiesner.

The occasion will be the third annual M.I.T. Alumni Seminar opening on September 11. Previous seminars have dealt with the past and present; this one will be concerned with the future in the domains of social affairs, living conditions, and human values. "Outlook on Man's Future" will be its theme.

On the first day Professor Lucian W. Pye will introduce Hudson Hoagland, '24, and Professors Kindleberger and Bruce Mazlish to discuss aspects of "The Future of Industrial Society."

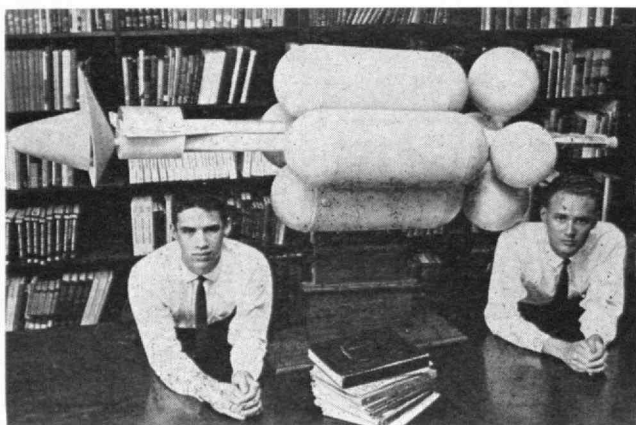
Professor Walter A. Rosenblith will preside the next day, the subject will be "Man's Future Environment," and the speakers will be Professors Nevin S. Scrimshaw, Charles L. Miller, '51, and Dean Burchard.

"Values—Prospects and Directions" will be the topic the third forenoon, Richard M. Douglas will preside, and Professors Katz, Gyorgy Kepes, and Elting E. Morison will speak.

President Julius A. Stratton, '23, will open the seminar and he and Mrs. Stratton will give a reception for the participants at its conclusion.

Professor Morris Cohen, '33, is chairman of the committee that has planned this seminar, and Professors Isadore Amdur, William H. Dennen, '42, Douglas, Peter Elias, '44, Robert J. Hansen, '48, Vernon M. Ingram, Pye, Rosenblith, Hans-Lukas Teuber, Charles H. Townes, and von Arx have served on the committee, with Frederick G. Lehmann, '51, Donald P. Severance, '38, and Miss Elizabeth J. Whittaker.

Attendance at the seminar will be limited to 200 Alumni and their wives, and registrants will reside in Baker House. Further details may be obtained from the Alumni Seminar Committee, Room E19-439, M.I.T.



A TRIP TO MARS in 1984 with a ship like this was described in a 400-page report by M.I.T. students led by John Holdren, '65, and Brian Hollenbeck, '64, this year.

Political Science Department

THE EXECUTIVE Committee of the M.I.T. Corporation approved the establishment of a new Department of Political Science within the School of Humanities and Social Science this spring. Designated Course XVII, it is headed by Professor Robert C. Wood, and will have its quarters in the new Hermann Building near the Alfred P. Sloan School of Management.

The Department of Economics and Social Science, in which Political Science was formerly a section, will be known henceforth as the Department of Economics, and will be headed by Professor E. Cary Brown.

Political Science has been an integral part of the undergraduate curriculum since 1945, when Professor Norman Padelford led in establishing an international relations program that was unique in the experience of technological institutions. Extensive research activities followed the establishment of the Center for International Studies in 1951 and the initiation of a communications program by Professors Ithiel de Sola Pool and Daniel Lerner. In 1958 a Political Science Section within the Economics Department began a graduate program explicitly emphasizing the close relations among engineering, science, and the conduct of domestic and foreign affairs. Some 50 graduate students are now enrolled for a doctorate degree and 500 are registered in undergraduate subjects.

"The work of a full-time staff of 20 is enriched by the contributions of 10 other Faculty members drawn from scientific and engineering disciplines and various research centers in the Institute," President Stratton's announcement of the recent change pointed out. "The decision to establish the Department acknowledges demonstrated instructional capability and the national and international reputation of its members for work at the research frontiers, with emphasis on empirical, systematic exploration of political behavior."

Professor Wood was graduated from Princeton University, received his doctorate from Harvard University in 1950, and came to M.I.T. in 1957 after five years in government service. He is director of the Falk Foundation Field Study Program for Political Education and a member of the Technical Committee of the Center for Space Research.

Professor Brown is an authority on taxation and fiscal policy who came to the M.I.T. Faculty in 1947. He was graduated from the University of California and received his doctorate from Harvard University. He was an economist for the War Production Board in 1940-1941, and for the Treasury Department from 1942 to 1947. He also has been a consultant for the Council of Economic Advisers, the Brookings Institution, the National Committee on Government Finance, the Twentieth Century Fund, the Committee for Economic Development, the Commission on Money and Credit, the Social Science Research Council, and the U.S. Joint Economic Committee. He has been a Guggenheim Fellow and Ford Foundation Faculty Research Fellow, and Visiting Ford Professor at the University of Chicago.

Sensing the Solar Wind

*How well can we communicate in deep space?
Sunblazer's voices may give us some clues*

By John V. Harrington, '58

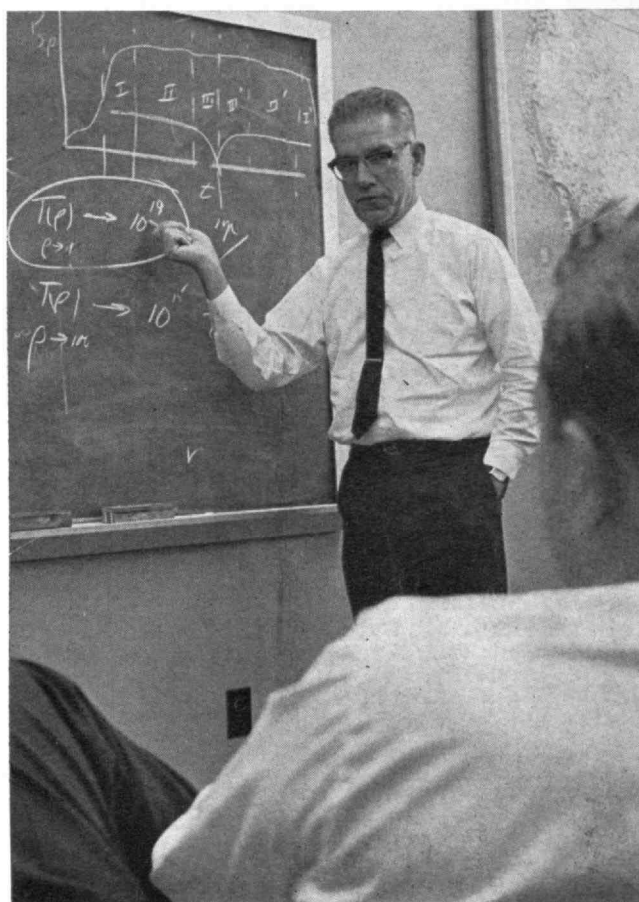
Director, M.I.T. Center for Space Research

SOME CALL the present time "the space age," but so far the name may signal the scope of our intentions more than the number of our achievements. In the last seven years, man has only just begun to gather good data on the near extraterrestrial regions and to devise means of getting there and surviving. Among other things, space scientists are curious now to know more about the solar plasma that streams at hypersonic speeds through planetary space. Already space probes have shown that these winds of ionized gas build up a shock front as they meet the earth's magnetosphere, then trail out behind in a turbulent wake that is now thought to reach as far as the orbit of the moon.

This extended solar corona, as the sun's atmosphere is also called, and the general emission of material and radiation from the sun affect terrestrial affairs, and we are familiar particularly with solar and auroral disturbances of radio transmissions from point to point on earth and from earth to space vehicles. Not surprisingly, the interplanetary plasma is extremely turbulent, its density is far from uniform, and a better characterization of the interplanetary plasma and its influence on deep-space communications is the objective of one interesting project in the new M.I.T. Center for Space Research.

We call this project Sunblazer, and the idea is to place a satellite containing a radio transmitter into orbit around the sun and to observe the effect of the interplanetary medium on signals transmitted from the satellite to earth as the satellite recedes and is eventually occulted by the sun. As now envisioned, such a satellite would weigh from 10 to 15 pounds, small as space vehicles now go but large enough for a solid-state two-channel transmitter and a solar cell power source. Because the signals would be coherent, observers on earth could detect the relative delay between pulses on different frequencies and thus could determine the electron densities along the path of transmission.

For these measurements, the transmitter would emit pulses 26 milliseconds long on carrier frequencies of 100 and 300 megacycles. Under normal conditions, the difference in times of arrival of the signals would be about 200 microseconds when the transmission path was displaced about 100 solar radii from the sun (the sun's visible diameter is 864,000 miles), but the delay would increase to about one-tenth of a second as the distance



Professor Harrington has been thinking about space for a long time. Before becoming director of the space center, he had a leading part in radar observations of the sun, the moon, and the planets at the M.I.T. Lincoln Laboratory.

was closed to only a few solar radii. Recently, we have obtained evidence that the electron densities in question rise greatly, by at least an order of magnitude, at times of greater solar activity, and then it would be expected that delays might vary from one millisecond to as much as one second over the same range of displacement.

Our scheme is to launch the Sunblazer spacecraft in a direction opposite to that of the earth in its orbit. With an initial speed of about 40,000 feet per second, the satellite would fall into a heliocentric orbit about midway between the earth and the sun and would arrive at superior conjunction—140 million miles from earth, on the opposite side of the sun—in about a year.

Engineering studies on Sunblazer are now in progress under a contract with the National Aeronautics and Space Administration, and they lead us to think that several shots a year might be economically feasible as a result of the low cost and relative simplicity of the satellites and the necessary launch rockets. Thus, with a continuously operating network of Sunblazers we might expect to work up a detailed profile showing changes in electron densities across the extended solar corona and over a period of time long enough to make the results reasonably definitive.

The practical value of the study would lie in determining at least some of the limitations that the interplanetary medium imposes on space communications. In addition, it may be possible to get some idea of the gross character of the solar magnetic field in the region from five to 20 solar radii, and we may be able to determine the size of some of the inhomogeneous areas in the sun's inner corona.

Sunblazer is the most novel of the experimental projects going on in the Center's Laboratory for Space Experiments, which we regard as particularly important in stimulating a campus researcher to undertake work in space-related fields. Without the opportunity to make real measurements in space, the research he does—especially in the physical sciences—would be sterile and less exciting.

And with some eight or nine participants from many of the Institute's departments, Sunblazer provides a good example of the unifying effect that a comprehensive project can bring to the Center's activities. In the same laboratory, in co-operation with the Cosmic Ray Group in the Laboratory for Nuclear Science, we are also developing a plasma probe for the Anchored IMP satellite, a gamma-ray telescope to be flown aboard an orbiting astronomical observatory, and a balloon-borne x-ray telescope that will rise to the upper levels of the atmosphere to observe x-ray sources in our galaxy.

Exciting as it is, the development of such instrumentation is only a part of the truly great variety of space-related research that our new facility is bringing to focus. The Center for Space Research at M.I.T. is the newest

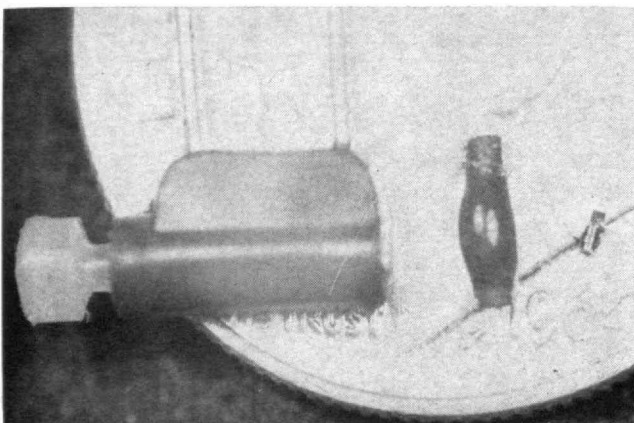
of our interdisciplinary laboratories. Its conceptual origins go back many years, but its factual beginnings date to May, 1963, when we received funds from NASA for its support. Let it be said, however, that the establishment of the Center most certainly did not mark M.I.T.'s entry into space studies. There have been large and thriving programs at several of the Institute's larger laboratories, such as the development of deep-space navigation and guidance systems at the M.I.T. Instrumentation Laboratory, and research on space communications, re-entry phenomena, and radar astronomy at the Lincoln Laboratory.

Altogether, a number of quite significant research efforts were in being, and the purpose of the new Center was not to encourage the growth of these larger enterprises but to provide a focus for a very large number of much more modest tasks. The intent was to stimulate graduate education and research in fields pertinent to the national space program and to do this by providing funds, facilities, some general direction and central administration.

This "seed research," as we call it, is designed to encourage new ideas. Happily, we possess the flexibility to do this because our program operates under an institutional grant, the distribution of which is determined by the Center's administration and its associated technical and policy committees. Thus we can identify promising ideas quite promptly, and research can start rapidly and develop early to the point where its authors may seek larger support, should it be justified. Although only about a year and a half old, the program has already filled in the chinks between the larger projects and has opened several new avenues of space research in a fairly direct and fruitful manner. This is particularly true of some topics in astrophysics (such as those mentioned), some work in exobiology, and several pertinent topics in the social sciences—all of which were not under way prior to the inception of the Center and all of which interested faculty and graduate students.

As indicated, the questions we can ask about space are legion. One of them is familiar to anyone who follows space activities even in a very cursory fashion. That is: How shall food be provided for men engaged in long-term space missions? One possible answer being explored at M.I.T. suggests the use of micro-organisms, particularly bacteria, as a source of protein. M.I.T.'s research in the life sciences includes extensive studies in psychobiology as well. In engineering, we have selected a number of themes. One concerns the behavior of materials in space where there may be long-term effects of radiation and high-vacuum on structural or electronic properties of certain metals. Those interested in fluid mechanics are investigating turbulent flow, free molecular flow (a study which has led to a new analysis of diffusion pumps), and the flow of interplanetary gas around planets—the last a laboratory study that complements NASA's research with space probes.

Some particularly exciting possibilities have arisen in one of our several projects on space propulsion and



Displayed on a dime, tiny electronic parts like these cut Sunblazer's weight by a factor of 10. Device at left is variable inductor or transformer. "Bugs" are fixed chokes.



Artist's drawing of new M.I.T. Center for Space Research to be built along Vassar Street. The structure will have

100,000 square feet of floor space and will cost about \$4 million, of which \$3 million will be provided by NASA.

power sources. Here, researchers are trying to accomplish a direct conversion of energy from radioisotopes. As a radioactive substance decays, almost all of the energy released appears as kinetic energy of charged particles.

If this can be converted, for example by deceleration in an electric field, we would have a very efficient process that should yield great increases in the specific power that can be obtained from radioactive sources. At present, most such systems depend on the conversion to heat energy in an intermediate step and generally have very poor over-all efficiencies.

It is clear that much of our effort—and quite naturally so—goes toward helping to establish a scientific and technical base for our national space program. But today we are keenly aware that these matters entrain with them social effects of equal importance, and it is thus most appropriate that the Center have an associated program in the social sciences.

Through case history techniques the sociological implications of the national space program are being explored. So, too, is the use of space research as an instrument of foreign policy. In industrial management, people are concerned with the impact of research and development on the U.S. economy and with questions such as whether our country needs a new “national manpower policy” for the scientific community. Also associated with the Center and in some cases administered by

it are larger research projects that in many respects represent the next stage in the evolution of an idea. Typical of these is the continuing research in space communications in the Research Laboratory of Electronics.

From the large sum of the Center's projects one can mention only an illustrative few, but perhaps this very abundance is significant. There are several measures by which it is possible to judge the effectiveness of such a program. One, of course, is by the quality of research it produces, and our program is not yet old enough to apply this criterion. A second is by the interest and co-operation it awakens among the campus researchers. From the very beginning we have been oversubscribed in terms of the number of ideas submitted. We were able to admit only about one out of every three projects proposed, and it took some considerable pondering to select those that we felt to be most important, initially or potentially.

Now the program has grown to the point where our most recent progress report lists the work of some 50 Faculty members and an equal number of graduate students who are distributed throughout the Institute's four major schools. They are working on some 40 separate research tasks, all of which provide opportunity for challenging research for graduate students. It is in this way, especially, that we hope to make our contribution—that is, in the training of well-qualified engineers and scientists who will help fulfill the nation's ambitions in space.

New Satellites Serve M.I.T.

A new transportable terminal on ground operates the LES-2

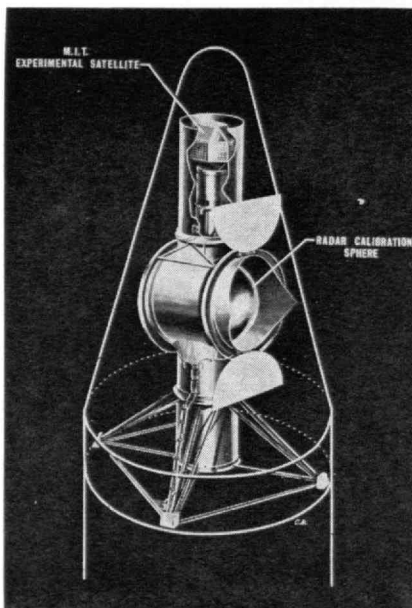
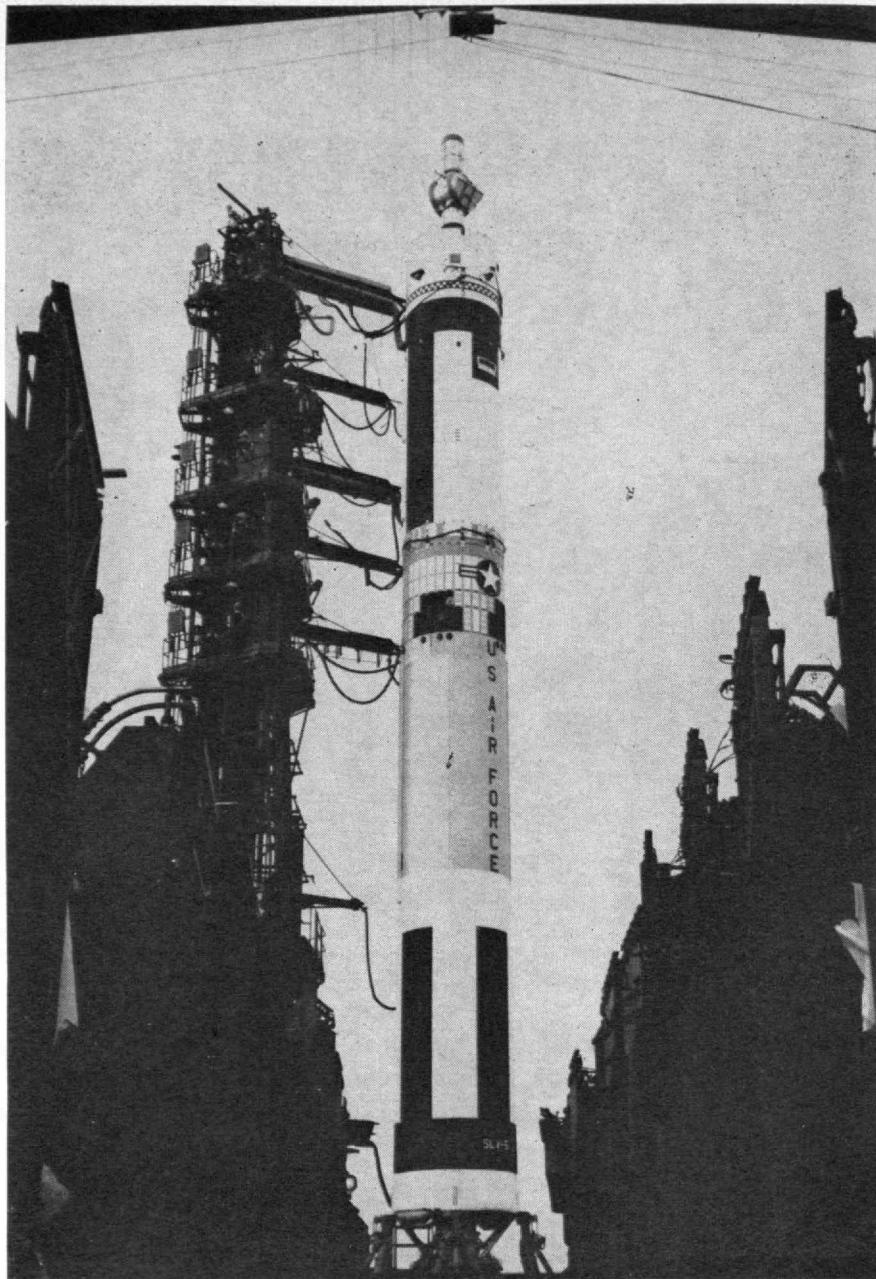
THE M.I.T. Lincoln Laboratory designed two of the newest birds circling the earth this summer. One is an active communications satellite and the other a silent calibration sphere. A USAF Titan III-A carried them both aloft from Cape Kennedy in May; both went into the desired orbits, and both are now being used in efforts to improve long-range radar and radio communication systems.

LES-2 (the second Lincoln Experimental Satellite) is similar to LES-1, which went up last February. It contains an all solid-state transponder operating at X-band radio frequencies (8,000 megacycles per second), a band which the laboratory's staff expects to become increasingly useful in the light of recent developments. The satellite also has an earth-sensing and antenna-switching system to provide antenna gain from a spinning space terminal, and a magnetic system for spin-axis control to aid in maintaining thermal balance and increasing the power output.

Similar electronic equipment on LES-1 worked well but that satellite's orbit was less suitable for the tests that were planned. LES-2 is in exactly the desired elliptical orbit with a perigee of 1,500 nautical miles and apogee of 8,000 miles.

The Lincoln ground station at Pleasanton, Calif., detected, tracked, and operated the equipment aboard LES-2 as soon as it came over that station's horizon. The next morning, when it first came within sight of the Westford, Mass., station, it was contacted again and operated from there. In addition to other tests, Wagner's *Ride of the Valkyries* was relayed from the satellite to the experimenters' satisfaction. The two stations have since sent and received many teletyped and vocal messages

(Continued on page 59)



LES-2 and a radar calibration sphere (shown below) both left the earth on a single Titan III-A but went into different orbits—both excellent.



The New Academy of Engineering

An address given this spring at a dinner in Washington of especial interest to many M.I.T. Alumni

By Julius A. Stratton, '23,

President of M.I.T. and Vice-president of the National Academy of Sciences

MEMBERS of the new National Academy of Engineering were guests of members of the National Academy of Sciences at its banquet last April 27 in the Statler Hilton Hotel in Washington during the science academy's 102d annual meeting. The science academy's president, Frederick Seitz, presided and the speakers included Dr.

Stratton, Charles G. Abbot, '94, and Augustus B. Kinzel, '21. It was the 50th anniversary of Dr. Abbot's election to membership in the National Academy of Sciences, and Dr. Kinzel is the first president of the National Academy of Engineering that was established only a few months ago.

JUST 102 years ago last Thursday—on the 22d day of April, 1863—the incorporating members of the National Academy of Sciences met for the first time in the chapel of New York University.

President Seitz, who has a fine sense of history, has reminded us on several occasions lately of events that led to that initial meeting. And he has suggested that there may still be lessons to learn from the formative years of this first of our national academies.

Indeed the records of those early efforts make fascinating reading. The founders were dynamic individuals, men of enormous energy, with strong ties to the world of affairs as well as to the realm of science and scholarship. From the beginning it seems quite clear that the idea of a senior honorary society—of honor for honor's sake, after the pattern of some older European academies—played a very minor part in their plans. These were men who viewed the advancement of science as the mark of a progressive civilization. They cherished in common a desire to promote science and education on this new continent. Their one overriding motive—the central theme that runs through all their letters and documents—was expressed in a hope to bring the best of scientific knowledge to bear upon the solution of great national problems. And in this endeavor they won the full support of the Congress.

Frank Jewett ['03] once summed up the essence of our basic charter in these words:

The Act of Incorporation is an astounding document. It is one of the most . . . sweeping delegations of power coupled with obligations of service to the Nation which the sovereign authority has ever made to a group of citizens completely outside the control of political government.

In less than forty words, the Act of Incorporation in effect created in the whole domain of science a Supreme Court of final advice beyond which there was no higher authority in the Nation and ensured that so far as was humanly possible its findings would be wholly in the public interest uninfluenced by any elements of personal, economic, or political force.

This is strong language. But it remains the charge to all of us who are gathered here this evening, for our new Academy of Engineering has been established under that identical charter.

We should remember, moreover, that in the context of the Nineteenth Century, "the whole domain of science" encompassed not only the pursuit of knowledge as an end in itself, but also useful knowledge in the tradition of Franklin and Jefferson. And for those of us who are disposed to think of the interplay among science, engineering, and government as a condition peculiar to our own times, it may be well to recall that nearly one-third of the original 50 members of the Academy of Sciences represented the Army, the Navy, or a Federal establishment.



Several weeks ago, as I began to reflect upon how I might best express my thoughts for this evening, the idea came to me that I, too, might draw a little upon history.

My earliest predecessor as president of M.I.T.—indeed the founder of that institution—was also the third president of the National Academy of Sciences, the immediate successor to Joseph Henry. William Barton Rogers was born a Virginian. He had been professor of geology and physics at William and Mary, then Dean of the Faculty at the University in Charlottesville. But the tensions were mounting in the 1850's, and with the growing frequency of student violence and disorder on that troubled campus, he finally despaired and removed to Boston.

Here was a man who had distinguished himself in the foremost ranks of science and had laid, moreover, new foundations for engineering education in the United States. I thought it most likely that even after the passage of 100 years, some of his words, perhaps from his inaugural address to the Academy, might have special meaning for us tonight.

Now it seems that when Mr. Rogers learned in Boston by telegraph of his election, he responded at once by taking the night train to Washington, arriving early in the morning of the last day of the session, almost exhausted by lack of sleep and fatigue. You know that the rigors of a journey on the Federal Express can hardly be overstated; and many of us here, I am sure, have known sleepless nights on that identical railway car.

Nonetheless, he proceeded directly to the Academy. We have only the recollections of former members as to what then took place. It appears that after gracefully returning thanks for the honor conferred upon him, Mr. Rogers, without notes of any kind, delivered an address "of such depth of thought and feeling, with such elegance and brilliance of expression" that his audience—including the Home Secretary—was held spellbound. No record whatsoever remains in the archives to tell us what he said.

Fortunately, in Cambridge I have access to the papers of President Rogers. The inaugural address of 1879 is missing, but there I did discover—in a long, handwritten memorandum—a most illuminating account of the first meeting of the founders of the Academy in the chapel of New York University. I recommend it to Dr. Seitz and to Dr. Kinzel [21]. For while there is little in this old document to guide us toward a more fruitful union of science and government, it does indeed offer another perspective upon our own history, and demonstrates once again how little the human heart and human interests are affected by the advances of science and technology.

To give you the spirit of Mr. Rogers' rather acid comments, let me read to you a few extracts from his memorandum of 1863, freely abbreviated and slightly expurgated. He begins as follows:

My first information that Congress had incorporated such an Academy, and that my name was on the list of 50 incorporators came from Professor Gilliss of Washington, who while on a business visit to Boston called at my office and asked me how I liked the new Academy, thinking of course that my Cambridge neighbors had acquainted me with the scheme which they were so active in setting up. He showed great surprise at my ignorance of the matter, and gave such particulars as he knew about the plan, mentioning many of the names of the corporators, with the further statement that among the distinguished names not on the list was that of George Bond, the Astronomer of Cambridge. I need not record the indignant surprise with which I heard of this.

Some time after, I received a Lithograph Circular from Senator Wilson—(the senior senator from Massachusetts who had introduced the original bill)—announcing the action of Congress and requesting a time to be named for holding a preliminary meeting of the corporators for the purpose of organization. Knowing really nothing of the purpose of the scheme, and very little of the names embodied in it, I felt so little care to connect myself with it that I delayed replying to Mr. Wilson's Circular for some weeks. I had only hearsay reports, and from what I could gather as to who were included in the list and who left out, the Organization seemed little more than an enlargement of the old Cambridge-Washington Clique.

Finally, but still in a rather indignant mood, Rogers decided to attend the first meeting, and he goes on as follows:

Some days before leaving for New York—and while I was hesitating as to my course—a friend mentioned in confidence a piece of news he had just heard. At the time I thought it a misconception, but it has been so confirmed by subsequent events that I now believe it to be true. The story is that a Cambridge Professor mentioned that *my name* was not on the list as furnished to Senator Wilson, by those who cooked it up, and that he had exclaimed against the omission and averred that he would have nothing to do with the bill



The Washington home of the National Academy of Sciences . . . It serves the nation as a "supreme court of final advice."

until my name was added. Such was the extent of my knowledge of these mysterious plans and proceedings when I entered the Hall of the University of New York in the morning of April 22.

And now one final passage. Toward the end of the meeting Professor Agassiz of Harvard invited those present to express whatever views they might have as to the principles which should guide in organizing the Academy and as to the objects to be promoted. Whereupon my Mr. Rogers rose and after expressing thanks to Senator Wilson for the patriotic earnestness with which he had labored in the cause of human progress, he took occasion to declare—in his words:

My deep regret and mortification to find missing from the list of Corporators the names of Bond and Draper and Baird and Loomis, and others distinguished for their scientific labors. Is it not a sad mistake, if not a grievous wrong, that in a society selected to represent the active sciences of the Country these brethren and co-workers of ours should have no place? I feel that *I* have no right to be here when they are excluded, and you gentlemen, you must feel in your hearts that *you* have no claim to be here on such conditions.

Some perhaps were unpleasantly startled by what I said, many showed an earnest sympathy. No one ventured to gainsay or take offense. Some attempt was made to avert the blow by talking of the rashness of men of science who attempt to judge of the merits of those with whose department of study they are not familiar. This led only to desultory talk about the danger of attempting too large a field and the necessity of concentrating the powers on special objects of investigation.

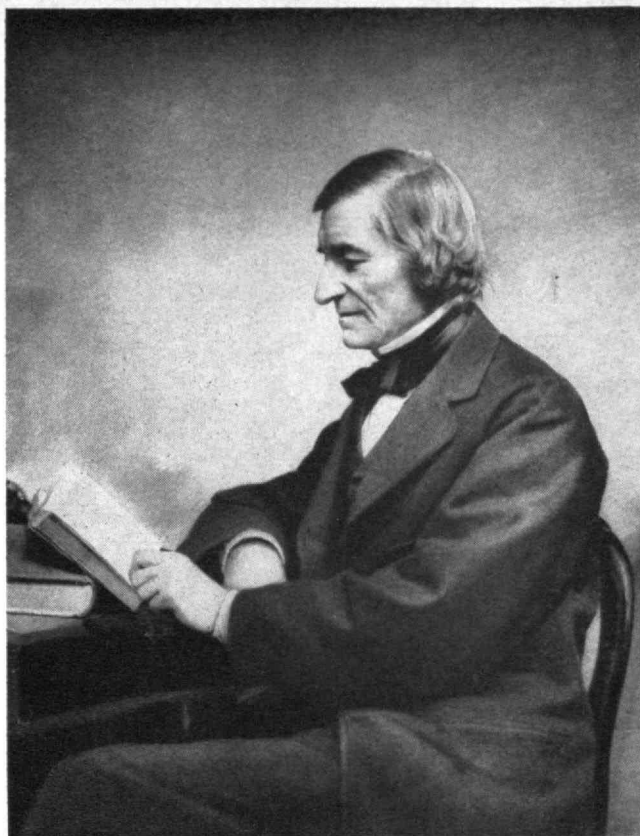
Thereupon the meeting adjourned for lunch, to return later in the afternoon to become embroiled in the discussion of a proper length of term for the president of the Academy.

These few excerpts foreshadow the trying times that were to follow. It was Joseph Henry who, perhaps more than any other one man, provided wise and steady guidance during that first critical period. You recall that Henry, professor of physics at Princeton and subsequently Secretary of the Smithsonian, had laid the foundations of much of modern electrical engineering. As the second president of the Academy, he established its tone and style and goals. He believed simply that only by an unswerving insistence upon the very highest standards of scientific achievement might this small body of men serve effectively the causes both of science itself and of the national welfare.

☆ ☆ ☆

Tomorrow morning, the National Academy of Engineering will convene its first annual meeting. This will mark the successful outcome of great efforts over a number of years, of many discussions, of some thoughtful misgivings, and a final resolution of major obstacles.

The central idea that has brought this whole movement into being is again that of service to the nation. It does reflect the desire to enhance the quality and standing of the engineering profession, and it has already begun to identify pre-eminent figures in the



William Barton Rogers while serving M.I.T. as President.

many fields of engineering and to honor their achievements. But the new Academy has been created primarily in the hope that through this means, the highest resources of the profession may be added to the attack upon the great technological problems that confront modern society.

We have with us this evening nearly all of those who have taken part in the events leading up to tomorrow's meeting. I cannot conceive how it might be possible to gather together any audience more perfectly qualified than this to comprehend the inherent nature and character of science and of engineering—to understand how these two domains of human activity are distinguished fundamentally one from the other by goals and by methods, yet how they share common ground, and how their interests by the very nature of things are completely interwoven.

At the outset of our discussions there appeared to be no striking unanimity on the part of either the scientists or the engineers as to how the desired ends might best be accomplished. Two extreme courses lay open: to expand the present Engineering Section of the Academy of Sciences, or to establish a new and wholly independent academy under a separate Congressional Charter. The first alternative appeared impractical on the grounds of sheer numbers. The second, wisely, was rejected. For on one point there has been from the beginning a complete consensus. There could be no greater disservice to the cause of science and engineering than to set one against the other, and so to bring about a cleavage between the two.

In the end we found recourse in that remarkable document of which I have spoken earlier, the charter of 1863. In a few paragraphs it embraces the common goals of the two academies. Under the provisions of that charter, without unduly impairing the freedom of action on the part of either, the bonds between the two may be maintained for all time.

But now that the formal steps of organization have been completed, we come to the acid test. The actions of the coming months and years must demonstrate beyond a doubt that this whole concept of an Academy of Engineering is indeed valid, and that we have in fact created here an effective instrument in the service of our country.



The difficulties that are inherent in this plan have been clear from the outset to the founders; the solutions have yet to be evolved. There are three factors in particular that distinguish the organization of engineering from that of science. They will influence profoundly all the developments that lie ahead.

The first emerges out of the present diffuse, rather amorphous character of engineering itself. In its diversity, in the profusion of its activities, it differs greatly from medicine or law or science. The range of occupations that today go by the name of engineering—from the highly specialized areas of research through design, development, production, construction, management, sales, service—fusing without any clear boundary into the domain of the technician—all these taken together claim the interests of a substantial fraction of the total working population of the country.



Presidents Seitz (left) of the Academy of Sciences and Kinzel of the newly formed Academy of Engineering.

The new Academy is not designed to duplicate the function of the innumerable technical societies representing special fields, nor, I believe, to offer direct representation to the whole array of occupations that I have just described. I suggest, therefore, that one of the first tasks to be undertaken is a clear definition of an appropriate constituency. For many years past the engineering societies have been diligent in their efforts to formulate codes of professional ethics. But there is a need that goes beyond—the need to establish for engineering the nature of the professional estate, its obligations, and its responsibilities. In such an effort a national academy must take the lead.

Secondly, I want to touch upon a fundamental difficulty in establishing the criteria for membership.

I spoke a few moments ago of Joseph Henry and the standards he set for scientific scholarship. Pure science today finds its home principally in the academic world, and the published papers of the scientist provide almost invariably an accurate measure of the quality of his achievements.

A great engineer, like a great scientist, is identified by his works. Sometimes these will appear in the form of brilliant, analytical studies, such as were produced so often by the genius of the late Professor Von Karman. And certainly a share of the membership of the new Academy will be found in the schools of engineering and in the research laboratories of industry.

But more often the works of an engineer are tangible constructions. We honor Mr. Ammann for his bridges and Clarence Johnson for his imaginative design of airplanes. It is important to remember, however, that by the nature of modern industry, great engineering triumphs today are increasingly the product of a team, of many minds and wills working in unison—the collective accomplishment of individuals whose separate contributions cannot easily be singled out. Nevertheless, it is for me a matter of faith that despite the massiveness of modern enterprise, there is in every great and successful undertaking a creative force of intellectual leadership. Granted that the task of identifying the particular individual engineering genius may be by no means so easy as in times past. It remains, nonetheless, the responsibility of the Academy to search it out. And that search must be unrelenting, thorough, and utterly detached from any shred of vested interest.

And thirdly, we must recognize that the very deep penetration of engineering into the entire world of affairs will make it all the more difficult to create and maintain that "Supreme Court of final advice." The voice of the Academy must be spoken from neutral ground. The integrity of its findings must be unimpeachable—wholly in the public interest, and in Dr. Jewett's own words, "uninfluenced by any elements of personal, economic, or political force."

In this idea of a detached, distinguished, supremely competent forum of discussion and source of help and advice lies the uniqueness of our American concept of a national academy. In the fulfillment of that purpose is our challenge and opportunity.

Fraternities At M.I.T.

*A helpful Institute attitude holds promise
of a solution of several unique problems*

By Marshall B. Dalton, '15

Chairman, Alumni Interfraternity Conference

THE FIRST fraternity at M.I.T. was established only two years after the founding of the Institute. Others followed through the years, the most recent having been chartered in 1961. Today, there are 28 chapters with about 1,200 undergraduate members.

Fraternities are a vital part of the Institute's undergraduate housing program. Nearly a third of the students live in the several houses. To replace these facilities would require approximately a 75 per cent expansion in dormitory capacity which, as Dean Fassett has pointed out,* is already inadequate to meet the demand. It is clearly in the economic interest of M.I.T. to maintain the fraternity residence system.

Economic interest, only, however, is an inadequate foundation on which to build. If the provision of housing were the only function of a fraternity, there are other ways of reaching that goal. The fact is that fraternities do provide far more than bed and board. It is in this context that M.I.T. has welcomed their presence and encouraged them as responsible members of its community. These small closely knit groups with common ideals, these "homes away from home" are an important element in the adjustment of a student to college and urban life; the close fellowship of these intimate groups gives him a source of personal identification when he might otherwise feel "lost"; responsibility for the operation of the house develops skills which are part of the total educational process. Underlying it all is the opportunity, because of common purposes and ideals, to live together in small groups, to appreciate the values in co-operative human relationships, to learn how to make those relationships a reality and to develop lasting personal friendships.

M.I.T. strives to impart an individuality to each of its living groups. Baker, Burton, Conner, Bexley, East Campus, and the Senior House each has its own personality with which a student may identify. The 28 fratern-



nity chapters also provide a diversity of choice and experience. President Stratton has said that the over-all M.I.T. housing goal is ". . . to meet the needs of a student body diverse in background, versatile in aptitude, and dynamic in spirit." He has further said that "the independent residences are a vital and essential part of M.I.T.'s pattern for undergraduate housing. For this reason, the Institute relies upon them and seeks to support and strengthen them." Such strong support has been a constant challenge to the fraternity system to be worthy of it.

Fundamental to M.I.T.'s approach is the autonomy of fraternities. Each chapter house is privately owned, generally with title vested in a corporation and trustees made up of its Alumni. It provides and maintains its facilities, establishes its rules of conduct, and determines its standards for nonacademic discipline—all, of course, within the general policies of the Institute. Through the years, this autonomy has engendered a sense of responsibility which has been borne well in comparison with other contemporary student groups on this campus, as well as others.

Fraternities today are responding to the times in several ways. Academically, a number of houses have availed themselves of M.I.T.'s offer to provide resident tutors. Though still in the pilot stage, this program which was originated in the dormitories shows great promise. It is made available only at the fraternity's invitation and is concerned primarily with assistance to students.

In the larger community, several houses have undertaken projects of refurbishing settlement houses, working with underprivileged children, and similar activities. Often these are used to replace the traditional, and—happily—fast disappearing practice of hazing. These programs, too, have been initiated by the undergraduates. They indicate an attitude of civic awareness and responsibility.

Historically, fraternities have provided the campus community with their share of student leaders, athletes, and intramural teams. These continue, and it appears that the general spirit of competition and co-operation

*See "The Housing Problem at M.I.T.," by Frederick G. Fassett, Jr., Dean of Residence, Technology Review, March, 1965.

between fraternities and other living groups has never been better.

Despite this background—and dynamic present—there is no sense of complacency. Fraternities at M.I.T. have their own peculiar problems, some of which are more acute than ever before. These must be met squarely and resolved if these living groups are to contribute to campus life in the future as they have in the past.

Most M.I.T. fraternities—all but six—are in Boston's Back Bay. This area has in recent years been the victim of a number of seemingly contradictory pressures. First, it is "home" for nearly a hundred schools and colleges, each with its own needs for expansion. Second, it is the object of a rejuvenation program to retain a quiet residential haven in the heart of the city. Third, it is adjacent to Boston's new Prudential Center which is giving an economic transfusion to its neighbors. Each fraternity, as a separate corporation, is in an extremely difficult position to cope with these problems on its own.

Many houses feel the need to expand. As their operating, maintenance, and carrying costs creep inexorably upward, the smaller houses need to broaden their base if they are to keep house bills in line. Expansion, however, creates problems of its own. If others are seeking Back Bay property, the demands obviously lead to values beyond the means of the house. Facilities in Cambridge are less than desirable and Brookline seems increasingly remote. The M.I.T. campus has often been considered but stringent city building codes make construction costs prohibitive, and land usage is at a premium.

Each house faces the constant problem of maintenance. Not only must this meet the normal ravages of healthy young men, but, as dormitories become more attractive, the house must also stay reasonably competitive. The age of the typical fraternity house further complicates the problem of maintenance. Perhaps even more significant are a new code and more stringent enforcement of existing building and safety codes by the city of Boston. As a result very substantial maintenance costs may be hidden in such items as fire-alarm systems, fireproofing, rewiring, and other required changes. Solutions to these problems are neither simple nor easily realized by one house going it alone. Furthermore, they are problems which may take several years to resolve. Probably they are beyond the capacity of the undergraduate Interfraternity Conference to solve despite its competence and effectiveness. For this reason a group of interested Alumni, with the encouragement of the M.I.T. Administration, called together in the spring of 1963 representatives from the various house corporations, from the undergraduate Interfraternity Conference, and from the Institute Administration. From this evolved the Alumni Interfraternity Conference (AIFC).

Meeting several times each year, and functioning through committees during intervening periods, the AIFC has provided a forum for exchange of ideas on common problems. It has led to such concrete steps as:

- 1) A comprehensive survey of finances for the several houses, useful to an individual house in evaluating its position.
- 2) Exploration of sites where buildings can be purchased and renovated for fraternity use.
- 3) A special service offered by M.I.T. for evaluating safety and health conditions in the houses.
- 4) Representation on civic and other organizations concerned with the future of the Back Bay area.
- 5) Creation by the M.I.T. Corporation of the Independent Residence Development Fund—to which Alumni have already given approximately \$100,000.

By furnishing a continuing forum for discussion of mutual problems and exchange of ideas between responsible fraternity alumni, undergraduates, and the Administration, the AIFC is likely to play an increasingly important role in the future.

A hindrance to fraternities in meeting their problems has been their difficulty in obtaining funds. Gifts to fraternities are not considered charitable contributions and, therefore, are not tax deductible. Loans from commercial institutions or from the general funds of M.I.T. are available, but the required principal payments and interest rate often are beyond the ability of the fraternity to carry. Though direct gifts to the houses remain the ideal form of support, the Institute has responded with an imaginative new approach called the Independent Residence Development Fund (IRDF). This unique arrangement goes a long way towards providing the low cost money needed by the fraternity and the tax deductibility so important to the individual donor.

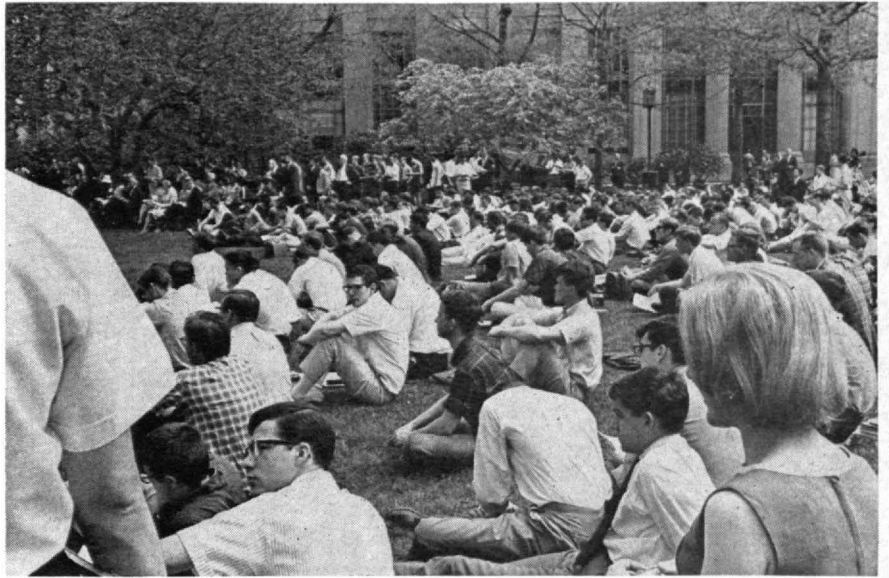
As a trustee of funds, M.I.T. is empowered to loan them in accord with the wishes of the donor. Thus, if a donor designates his gift to M.I.T. as being for the IRDF, the Institute proposes to loan it to a fraternity in need as determined by an allocation board of Alumni† at terms as low as 3 per cent for as long as 40 years, and for as high as 100 per cent of appraised value. Obviously, this is a giant step forward in funding future needs of fraternities.

The Alumni Fund has co-operated fully in this program. An Alumnus may designate his regular Fund gift as being for the IRDF, and his gift will be credited to his class fund, including his Class Reunion Fund and will ensure his receipt of the Technology Review. It is important to note, however, that for the contribution to be used for fraternity loan purposes, the donor *must* specify the "Independent Residence Development Fund" as the recipient.

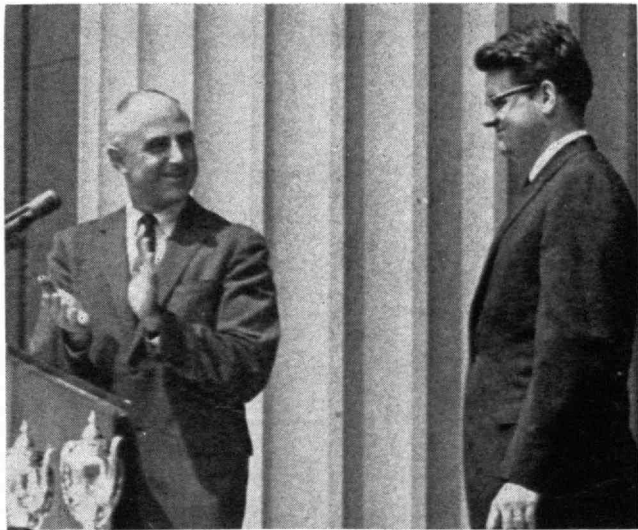
All of these developments inspire new confidence in the future of fraternities at M.I.T. They have an illustrious past inextricably bound to the development of the Institute. Though the problems of the moment are trying, they are being met with imagination and with dispatch.

†Walter J. Beadle, '17, Gilbert M. Roddy, '31, and Julian T. Leonard, '18, chairman.

A Gathering to Honor Students and a Teacher



Dean of Student Affairs Kenneth R. Wadleigh, '43 (above), spoke to members of the M.I.T. community assembled in the Great Court for the annual Awards Convocation this spring.



Charles E. Holt, 3d, '62, Assistant Professor of Biology, received (above) the Everett Moore Baker Award for outstanding undergraduate teaching from Professor Ascher H. Shapiro, '38, and (right) Mrs. Peter T. Van Aken, '65, accepted a Compton Prize from Mrs. Karl T. Compton on behalf of the M.I.T. Association of Women Students.



New Books

LIBRARIES OF THE FUTURE, by J. C. R. Licklider
(*The M.I.T. Press*, \$6).

Reviewed by Professor Carl F. J. Overhage

"OF MAKING many books there is no end," wrote the author of Ecclesiastes. Confirming this prophecy, J. W. Senders* estimates the present growth rate of knowledge stored in the world's libraries at 2×10^6 bits per second. The capability of the human mind to absorb new knowledge is limited to something like a hundred bits per second. The age-old complaint about this mismatch has been voiced with a new note of anguish during the spectacular expansion of research activity that followed World War II. Hearings on the subject have been held by the U.S. Congress; the President's Science Advisory Committee has studied the problem; a Clearinghouse for Federal Scientific and Technical Information has been established under the Department of Commerce.

One of the dominant agencies dealing with the information crisis has been the Council on Library Resources, established in 1956 by the Ford Foundation. Among the many projects supported by the Council in the search for new solutions of library problems, perhaps the most ambitious was a fundamental and comprehensive inquiry into the characteristics of "the library of the 21st century." In sponsoring that project, the Council was fully aware of the decisive importance of finding the right individual to lead the study. After careful consultations, it chose J. C. R. Licklider.

He is a remarkable man. His career epitomizes the emergence of experimental psychology from quiet academic corners into the lively world of affairs. During the war years, Dr. Licklider did research under S. S. Stevens in the psycho-acoustic laboratory at Harvard. He stayed on as lecturer until 1949 when he came to M.I.T. as associate professor of psychology. In 1959, he joined the firm of Bolt Beranek and Newman, where he became vice-president in 1961. During the years at M.I.T., his interests had expanded beyond acoustics to the broader problems of communications, and, with the advent of high-speed digital data processing as a major factor in communications, he became intensely involved in the problems of man-machine interaction.

The project of the Council on Library Resources got underway at Bolt Beranek and Newman in November, 1961. A year later, Dr. Licklider accepted an assignment among the brilliant company of young men that Harold Brown had assembled in the Pentagon. He continued to supervise the library project until it was com-

pleted in November, 1963. At the same time, he became a major force in establishing a project to design a time-shared computer utility that would enable many members of an academic community to gain immediate access to a large computer whenever their intellectual processes could utilize that kind of reinforcement. This project is now in operation at M.I.T. under the designation MAC. After seeing MAC established and the library project completed, Dr. Licklider joined the research staff of the IBM Corporation.

The book under review is a condensed version of the final report of the library project. While it does not deal explicitly with Project MAC, the close relationship between the fundamental aims of the central computer utility and the library of the future is clearly implied in Dr. Licklider's book. In both systems, the user will seek to amplify his intellectual work by real-time interaction with an electronic network of vast capabilities. In one case, the emphasis is on data processing, in the other on information transfer. The key problem in both cases is to unite the system and its user in close and successful collaboration.

The first part of the book treats of man's interaction with recorded knowledge. It provides a broad conceptual foundation for the detailed studies that are summarized in the second part. A "library of the future" is identified as a system that will, after the year 2,000,

"1. Be available when and where needed.

"2. Handle both documents and facts.

"3. Permit several different categories of input, ranging from authority-approved formal contributions (e.g. papers accepted by recognized journals) to informal notes and comments. . . .

"6. Provide access to the body of knowledge through convenient procedure-oriented and field-oriented languages.

"7. Converse or negotiate with the user while he formulates his requests and while responding to them.

"8. Adjust itself to the level of sophistication of the individual user, providing terse, streamlined modes for experienced users working in their fields of expertise, and functioning as a teaching machine to guide and improve efforts of neophytes. . . .

"10. Provide the flexibility, legibility, and convenience of the printed page at input and output and, at the same time, the dynamic quality and immediate responsiveness of the oscilloscope screen and light pen. . . ."

and do many other things besides. Such a system is termed a "procognitive" (for knowledge) system. The reader will hardly expect to find it described in precise engineering detail, but he will readily conclude that it has some resemblance to a large time-shared computer or teaching machine system with exceptional storage capacity and a multiplicity of sophisticated input-output devices. An imaginary working session at the console of such a system is described in some detail.

(Continued on page 50)

**Science* 141, 1067-1068 (1963).

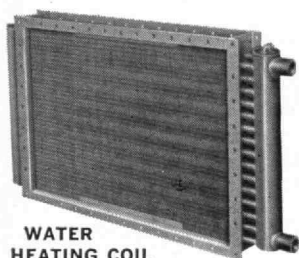


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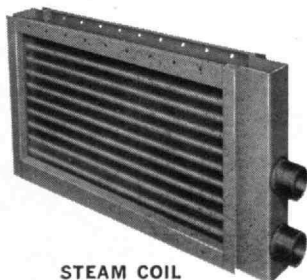
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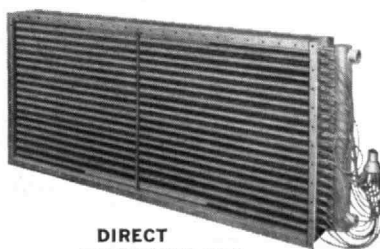
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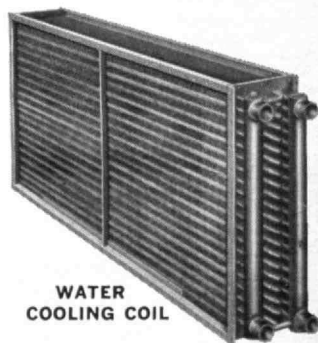
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New Books

(Continued from page 48)

A short and trenchant chapter deals with the organization of stored information; here the reader is prepared for the possibility that his interaction with the system may ultimately involve formal languages of higher order than natural English with its many ambiguities. This problem of language turns up again when, in the following chapter, the man-computer interaction is more closely examined. At this point, the book deals not only with the substantive users of the system, but also with the programmers and the organizers. If all this adds up to a somewhat frightening prospect for a scholar who may not be in love with "automation," the final suggestion of this first part of the book may be reassuring:

"The console of the procognitive system will have two special buttons, a silver one labeled 'Where am I?' and a gold one labeled 'What should I do next?' Any time a user loses track of what he is doing, he can press the silver button, and the recapitulation program will help him regain his bearings. Any time he is at a total loss, he can press the gold one, and the instruction program will explain further how to use the system. Through either of these programs the user can reach a human librarian."

Will that human librarian also tell him what has become of the books? Dr. Licklider doesn't say. But this reviewer knows him and is confident that he won't burn the books after having put their contents on file in his system. One must remember that Dr. Licklider deals

with only one kind of procognitive system. Scholars of the 21st century will still get some of their knowledge by lectures, by conversations, and even by books. Perhaps the books will be kept by museums. Or by monasteries. Deterioration of the paper, alas, will dispose of the problem.

The remainder of Dr. Licklider's book consists of brief summaries of the detailed studies that were performed for the Council on Library Resources. Here the reader will find more information on syntactic analysis by computer, on storage requirements, on measures of effectiveness, on question-answering systems, and on computer techniques and procedures. For the expert in information processing, these chapters contain the real meat of the two-year study. To the interested layman, they will convey a valuable impression of the nature of the problems that must be faced in developing procognitive systems. These are vast problems, and two years is not a long term. Time and again, the substantive research got beyond its starting phase. The book ends with a list of 40 references and an index.

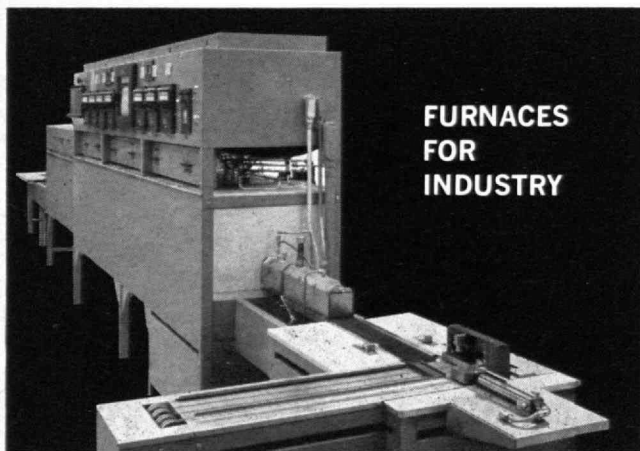
In arriving at a final appreciation of *Libraries of the Future*, it is interesting to compare this book with an earlier essay, by Professor John G. Kemeny of Dartmouth College, on *A Library for 2,000 A.D.*†

(Concluded on page 52)

†In Martin Greenberger (ed.), *Management and the Computer of the Future*, New York, 1962, M.I.T. Press and John Wiley & Sons, pp. 134-178.



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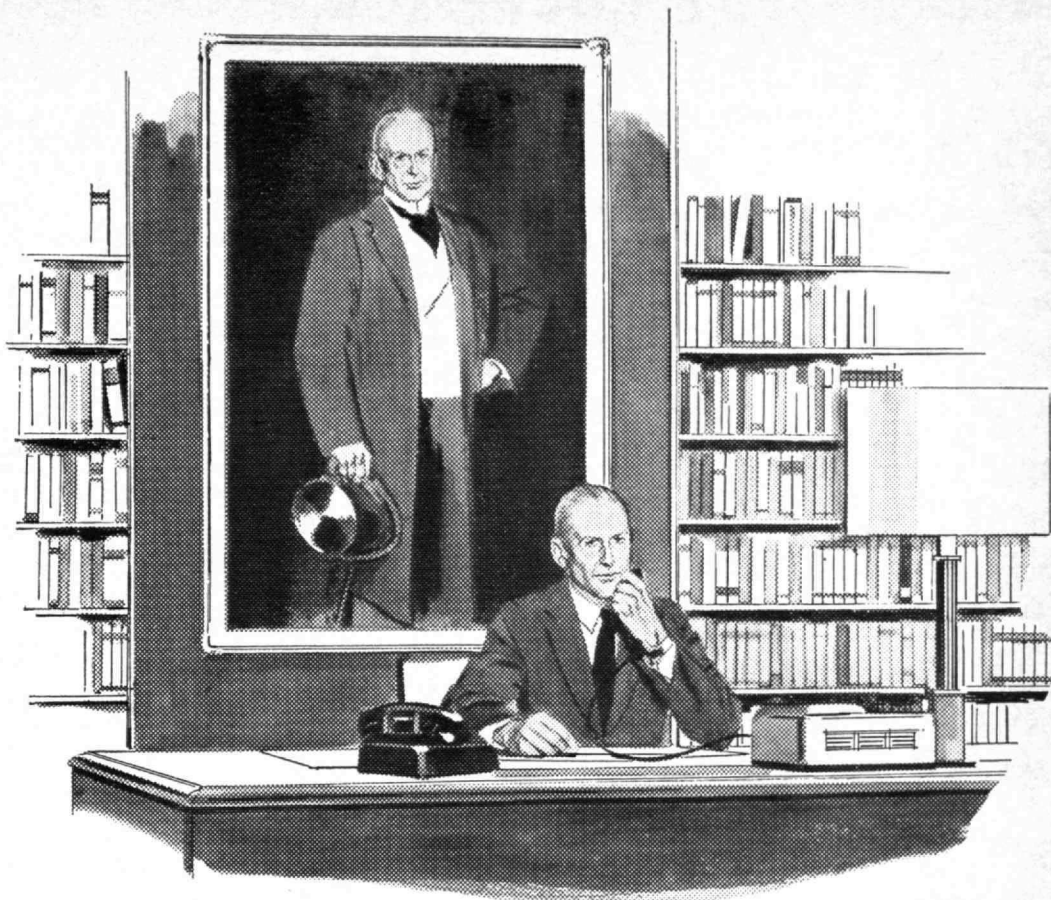
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New Books

(Concluded from page 50)

The library visualized by Kemeny is in its fundamental concepts similar to the library of today. Its basic unit is an *item*, i.e. an article in a journal, or a chapter in a book. The structure into which the collection of items is assembled bears a close resemblance to the classification of classical library science. Kemeny invokes potential improvements in storage and communications technology to reduce a large collection to manageable form.

Licklider's sights are raised very much higher. In his procognitive system, the basic unit is an *idea* or a *fact*, and access to the information store is by means of a high-order formal language. He takes us into a region well beyond present library concepts, a region in which discourse is exciting and success speculative.

The outstanding quality of Dr. Licklider's book is its uninhibited presentation of this highly imaginative approach to the library problem. The reader's enjoyment is sustained by constant awareness of the author's high competence in his field. In the technical literature one does not find many books that combine imagination, competence, and style. Here is one.

Have You Seen These Books?

RECENT publications likely to be of especial interest to M.I.T. graduates have included:

The Classical Atom, by Francis L. Friedman, '49,

and Leo Sartori, '50 (Addison-Wesley Pub. Co., \$3.75).

Differential Games: A Mathematical Theory with Application to Warfare and Pursuit, Control and Optimization, by Rufus Isaacs, '36 (John Wiley, \$15).

Elements of Cloud Physics, by Horace R. Byers, '32 (University of Chicago Press, \$7.50).

Elements of the Art of Architecture, by William Muschenheim, '25 (Viking Press, \$5.95).

Foundations of Economic Analysis, with a new introduction by Paul A. Samuelson, Professor of Economics at M.I.T. (paperback, Atheneum, \$2.95).

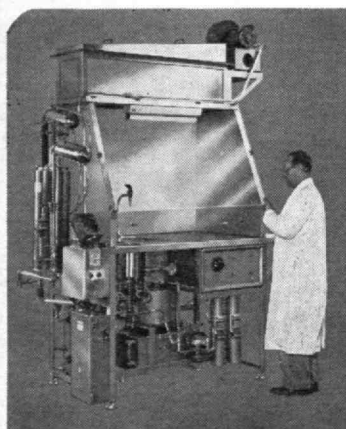
Introduction to Semiconductor Physics, by Professors Richard B. Adler, '43, and Arthur C. Smith of M.I.T., and Richard L. Longini (John Wiley & Sons, Inc., \$4.50; a paperback edition for \$2.65).

Introduction to Structural Dynamics, by Professor J. Melvin Biggs, '41, of M.I.T. (McGraw-Hill Book Company, \$9.50).

Law and Economic Policy in America, The Evolution of the Sherman Antitrust Act, by William Letwin, Associate Professor of Industrial History at M.I.T. (Random House, \$5.95).

Organization for Profit: Management for the Age of Technology, by Gerald G. Fisch, '50 (McGraw-Hill Book Company, \$9.50).

Physical Electronics and Circuit Models of Transistors, by Associate Professor Paul E. Gray, '54, of M.I.T., David DeWitt, Albert R. Boothroyd, and James F. Gibbons (John Wiley & Sons, Inc., \$2.95).



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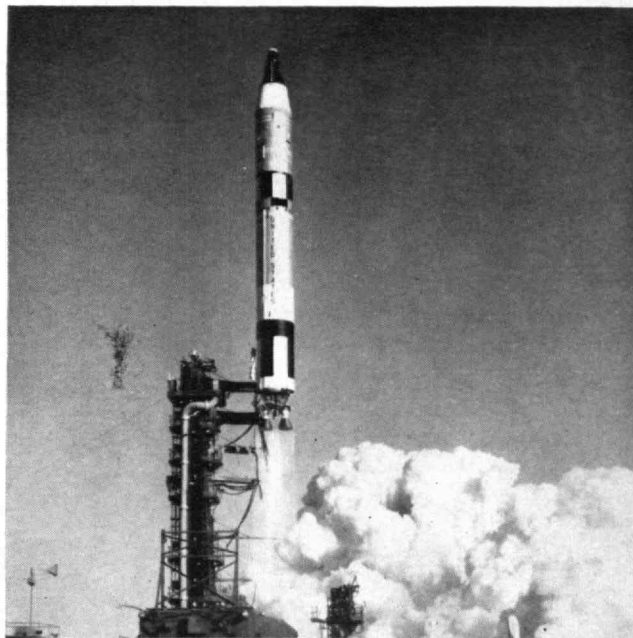
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We wish to extend our appreciation to the Massachusetts Institute of Technology and the more than 80 M.I.T. alumni who are members of the Aerospace Corporation technical staff. The work they are doing in carrying out the responsibilities of general systems engineering and technical direction for the U.S. Air Force Space and Ballistic Systems Division and in support of the U.S. manned flight program, cannot be overemphasized in its importance to the preservation of our free institutions.

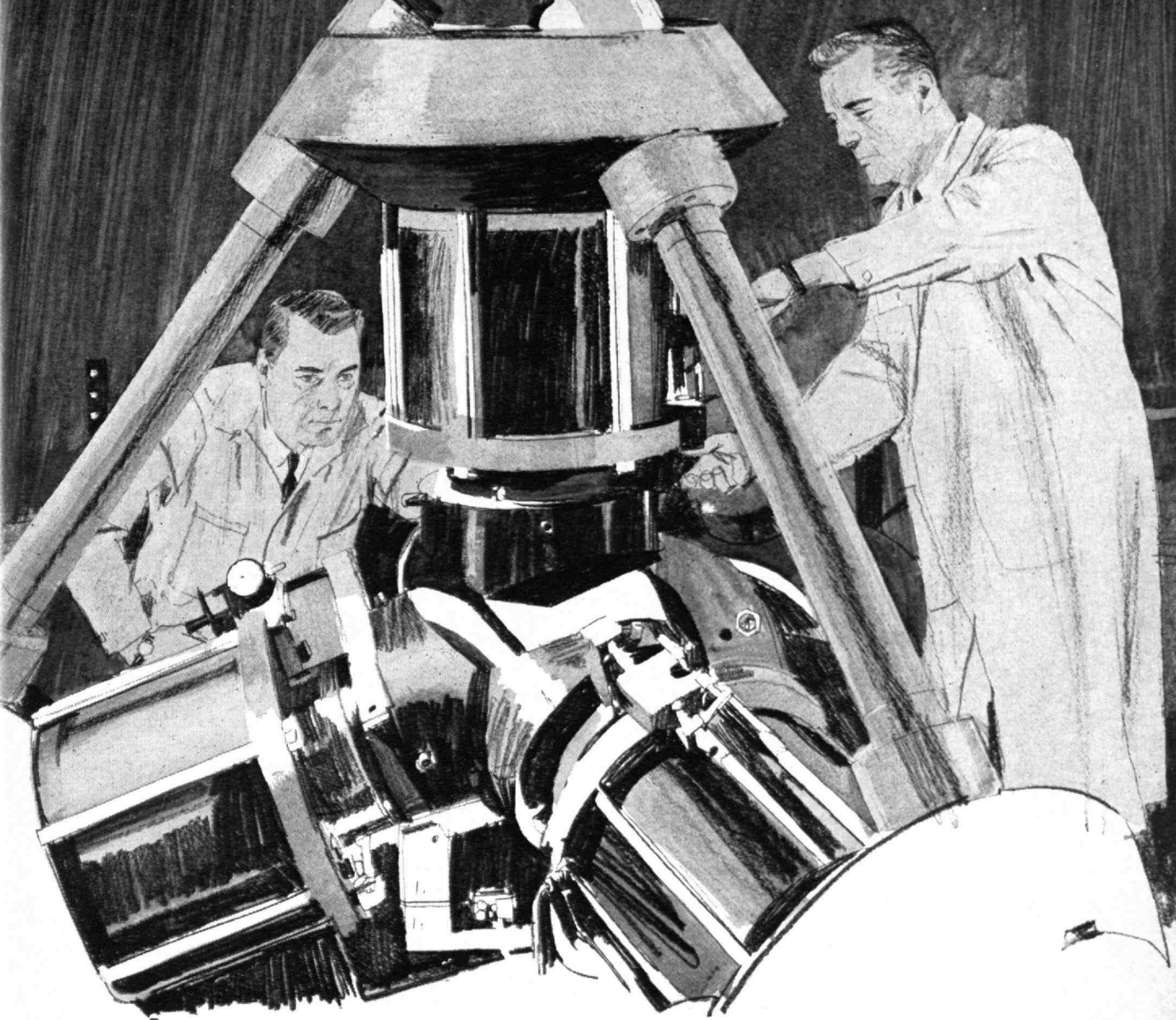
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Institute Yesteryears



As recalled by the late H. E. Lobdell, '17

25 Years Ago

ON JULY 1, 1940, *Frank B. Jewett*, '03, President of Bell Telephone Laboratories, Inc., retired as the 46th President of the Alumni Association, being succeeded in that office by *Henry E. Worcester*, '97, Vice-president of the United Fruit Company; and *Raymond Stevens*, '17, retired as Vice-president, being succeeded by *John E. Burchard*, '23.

Also, *Hovey T. Freeman*, '16, and *Edwin D. Ryer*, '20, retired as members of the Executive Committee, which two vacancies were filled by the election of *Nathaniel McL. Sage*, '13, and *Francis A. Barrett*, '24.*

Also, *Charles E. Smith*, '00, *Rufus E. Zimmerman*, '11, and *Arthur C. Dorrance*, '14, retired as Alumni Term Members of the Institute's Corporation, their successors for 1940-1945 being *Page Golsan*, '12, *Egbert C. Hadley*, '14, and *Alfred H. Schoellkopf*, '15.

50 Years Ago

STONE & WEBSTER'S vouchers covering the first 22 months' expenditures for the construction of the "New Technology," up to July 1, 1915, totaled \$2,245,706.98. Of this sum, \$343,860.58 (15.3 per cent) was for the foundations, and \$1,413,938.19 (63 per cent) for the superstructures of what would become Buildings 1, 2, 3, 4, and 10.

Progress over the summer toward the completion of these items was as follows:

Percentage Completed

	July 1	October 1
<i>Foundations</i>		
Buildings 1, 2, 3, and 4	98	99
Building 10	97	98
<i>Superstructures</i>		
Buildings 1, 2, 3, and 4	92	97
Building 10	67	85

*Three of the above-named subsequently served as Presidents of the Association, namely: Barrett as the 49th President in 1942-1943; Stevens, 51st in 1944-1945; and Ryer, 59th in 1952-1953.

► The original plans for the "New Technology" had contemplated housing the whole Institute simultaneously on the Cambridge site. Later, the decision of the Supreme Court with regard to the sale of the Institute property on Boylston Street, and the necessity of keeping expenses within the limits of funds that were available, or in prospect, made a change of plans expedient.

It was decided, therefore, to house the Department of Architecture in the Rogers Building in Boston, as that department could be separated with less difficulty than the others; and also, as a temporary arrangement, to have the work of the Department of Mining and Metallurgy carried on in that building.

In June, 1915, however, announcement was made that three Alumni—*Coleman du Pont*, '84, *Pierre S. du Pont*, '90, and *Charles Hayden*, '90—had agreed to contribute in equal shares the amount required for the erection of a suitable wing of the educational group in Cambridge to house the Department of Mining Engineering and Metallurgy. Construction on this wing, the present Building 8, began in March, 1916.

75 Years Ago

IN HIS Annual Report, President *Francis Amasa Walker* wrote: "On the 3rd of June, the degree of Bachelor of Science was conferred upon 102 members of the Class of 1890, and upon one member of a preceding class who had supplied certain requirements previously lacking.

"Inasmuch as Graduation Day of 1890 marked the close of the first quarter-century in the life of the Institute, it was made the occasion of a commemorative address by *Augustus Lowell, Esq.*, of the Corporation, in which the work of 25 years was reviewed, and the contributions of the school to the cause of scientific and technical education were set forth, both for the encouragement of the governors, teachers, alumni, and other friends of the In-

stitute, and as an historical record of interest."

Of the 103 degrees granted in 1890, 74 were in engineering, 24 in science, and 5 in architecture.

With the addition of the Class of 1890, the Institute had a total of 762 graduates.

100 Years Ago

AT THE 40th Meeting of the "Government," held June 5, 1865, "the Building Committee submitted a 'Statement of Account' by which it appears that the whole amount of work contracted for in connection with the Institute Building is \$126,743, of which there has been paid \$106,568.04, leaving as contracted for, but not yet paid, \$20,174.96."

Charles L. Flint "inquired whether any preliminary steps had been taken in relation to the best mode of ventilating and warming the Institute Building, it being an important matter, which, if not already attended to, certainly should receive early attention. . . ."

After remarks by other members, it was

"Voted, that a Special Committee of three be chosen to take supervisory charge of Ventilating and Warming the Institute's Building; and that they be requested to prepare plans for the same, and report thereon as early as practicable."

Later, at the 41st Meeting, held on August 10, the Special Committee submitted a detailed nine-page report with the estimated costs of \$6,345 for "Heating" and \$1,850 for "Motive Power."

The report was accepted and it was voted that the Special Committee (in consultation with the Building Committee and the Superintendent) "be vested with full power to carry into effect, with such minor modifications as may be deemed expedient, the Plan this day reported for ventilating and warming the Institute's Building."

► On July 31, 1865, from Paris, France, *Charles William Eliot* wrote President *William Barton Rogers* to accept the latter's offer to become the Institute's first Professor of Analytical Chemistry and Metallurgy, at a salary of \$2,000. Professor Eliot held this post until 1869, when he was elected to the Presidency of Harvard University.

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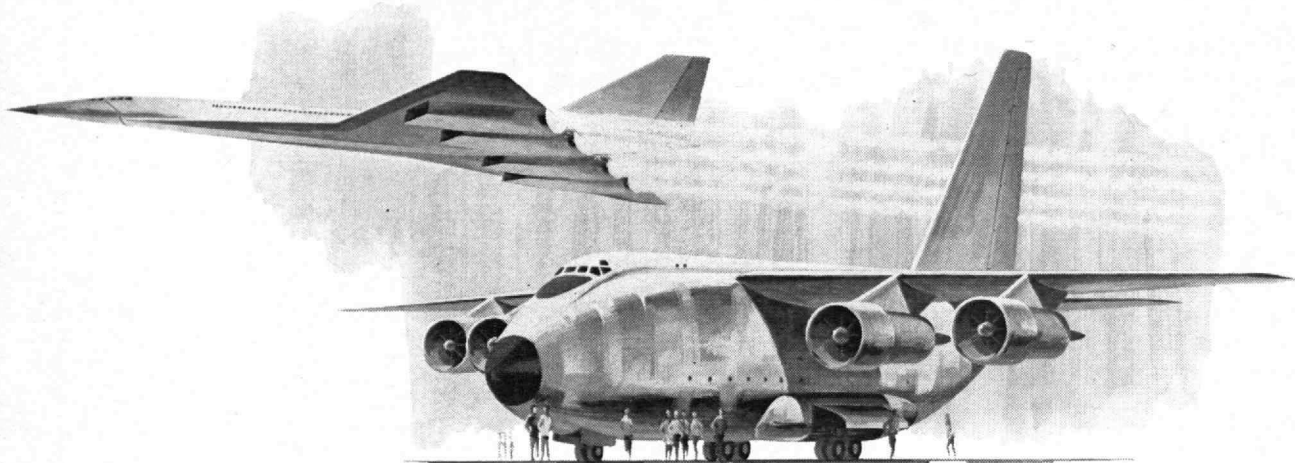
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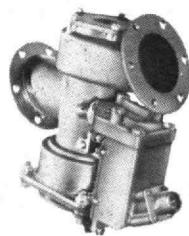
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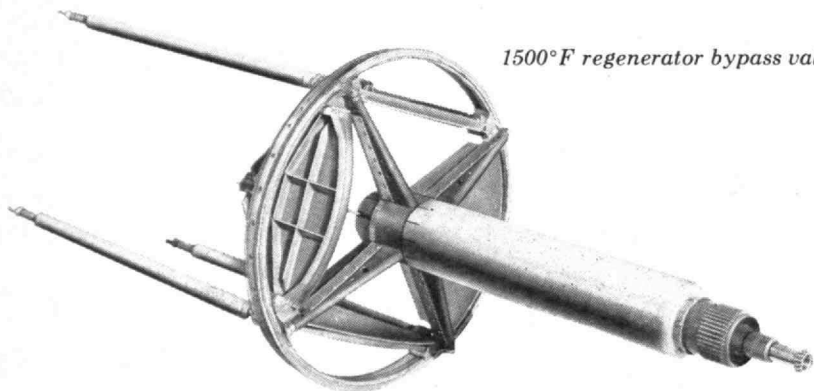
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1500°F regenerator bypass valve

New Satellites Serve M.I.T.

(Continued from page 40)

across the continent via the new satellite during regularly scheduled operating periods lasting up to several hours.

In addition, a new transportable station called LET (for Lincoln Experimental Terminal) has employed LES-2. This terminal can be towed on a highway or transported by air.

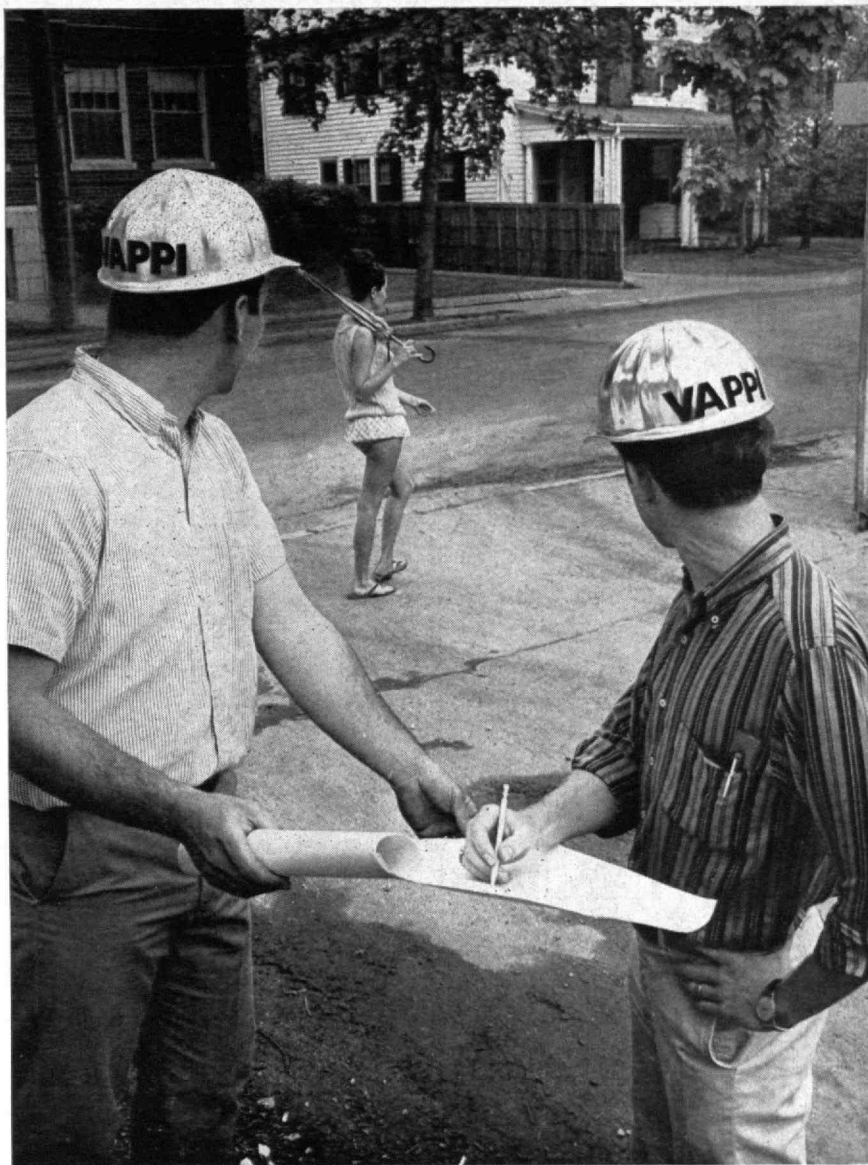
A Spherical Square Meter

The calibration sphere launched at the same time as LES-2 went into the desired circular orbit at an altitude of 1,500 nautical miles. It is a hollow, thin-walled aluminum ball 44.5 inches in diameter, made to Lincoln Laboratory's specifications by the Rohr Corporation of Chula Vista, Calif., under the Advanced Research Project Agency's sponsorship. It provides a test target with a projected area of exactly one square meter for accurate calibration of powerful radar and radio systems.

Lincoln Laboratory's Millstone Hill L-band radar at Westford detected it at a slant range of more than 3,300 nautical miles when it came over the horizon, and tracked it for 10 minutes. The satellite's minimum range on that first pass above the horizon of Millstone Hill was 3,100 nautical miles and its maximum elevation angle less than 10 degrees. It was found to produce steady, non-scintillating echoes of uniform amplitude, and has since been tracked repeatedly at more favorable ranges and elevation angles.

This sphere in a high orbit will be useful only to a limited number of high-performance radars that can sense targets at long ranges, but these radars are of great importance. All other silent satellites produce echoes that fluctuate because of the size and shape of the reflector. Active transmitters out in space are difficult to use for calibration work because of instabilities in the output from them. In addition to serving radar and radio engineers, the sphere will be helpful to researchers measuring the time-delay and Doppler spreading caused by various atmospheric conditions, and to those who are seeking additional information about the shape of the earth's gravitational field. How long this

(Concluded on page 60)

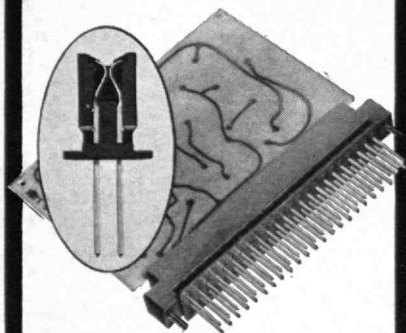


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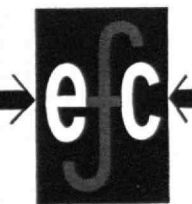


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New Satellites Serve M.I.T.

(Concluded from page 59)

rigid sphere will survive is difficult to predict, but it is expected to be useful for five years.

The Transportable Terminal

Large ground stations have been required thus far for long-distance communications via satellites. The LET designed at Lincoln Laboratory at the same time that the LES satellites were being built can be hauled around in a two-part vehicle.

One part contains electrical power generators and electronic equipment adequate either for one digital voice channel and two teletype channels or for a high-speed data channel. The apparatus includes a small general-purpose computer, which can both point the antenna and handle the signal multiplexing and coding, and a new vocoder that reduces the bit-rate required for speech transmission over a digital channel by a factor of four to one.

A second, smaller unit supports a 15-foot Cassegrainian antenna. It can be towed behind the large truck, and its wheels can be detached at the site of operations.

The LET can be used to bounce signals off the moon or the Westford dipole belt as well as for work with satellites. It is considered a step toward development of ground terminals that would be mobile as well as transportable.

The LET's first workout was with LES-2 this spring, and it was described in papers prepared for presentation in June at the I.E.E.E. annual communications convention at the University of Colorado by Paul Rosen, Ralph V. Wood, Jr., Paul R. Drouilhet, Jr., '54, Joseph Tierney, '55, John N. Harris, and Irwin L. Lebow, '48, of Lincoln Laboratory. Herbert Sherman, Robert M. Lerner, '59, Phillip Waldron, and Donald C. MacLellan, '57, reported on LES-2 at the same meeting.

The satellite experiments are part of the laboratory's Air Force-sponsored Space Communications program, and both LES-2 and the calibration sphere were carried as a "bonus" on the fourth test flight of the Air Force's Titan III-A.

Additional LES satellites for other experiments are scheduled to be placed in orbit in the future.

EVERY DAY IS M.I.T. ALUMNI DAY AT BEACON

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A Chemical Control Process Within Living Cells

M.I.T. RESEARCHERS reported additional evidence this spring that genes strung along the chromosomes of living cells are turned off and on by the presence or absence of biochemicals that act as cellular control agents. Such control processes have been observed for many years in unicellular life forms such as bacteria. Now Professor Irwin W. Sizer and Dr. B. C. Goodwin have observed a chemical control process in more complex mammalian cells, specifically in brain cells from chick embryos.

Dr. Goodwin was formerly a researcher in the Department of Biology headed by Dr. Sizer but is now at the Institute of Animal Genetics in Edinburgh, Scotland. Their findings were reported in the April 9 issue of *Science*.

They observed that up to a certain point (200 micrograms per milliliter of tissue) more and more concentrations of a class of proteins called histones in chick embryo cells will cause the cells to produce correspondingly more and more amounts of an enzyme known as lactic dehydrogenase. When the critical concentration is reached, however, the process is reversed. The more his-

tone present in the cells, the less lactic dehydrogenase there is produced. Finally, a point (400 micrograms per milliliter) is reached where production of the enzyme is cut off entirely in the presence of a massive concentration of histone.

The researchers believe the histone acts on the gene responsible for lactic dehydrogenase production. Histone, in its own turn, is believed to be produced by gene-like nucleic acid material tucked away in the nucleolus. Histone is a well-known protein, believed to have several functions. Genetic control over enzyme production, however, may turn out to be one of its primary purposes. The lactic dehydrogenase enzyme studied by Drs. Sizer and Goodwin is a vital element in the chemical reactions that release energy from sugar molecules delivered to the chick brain via the blood stream.

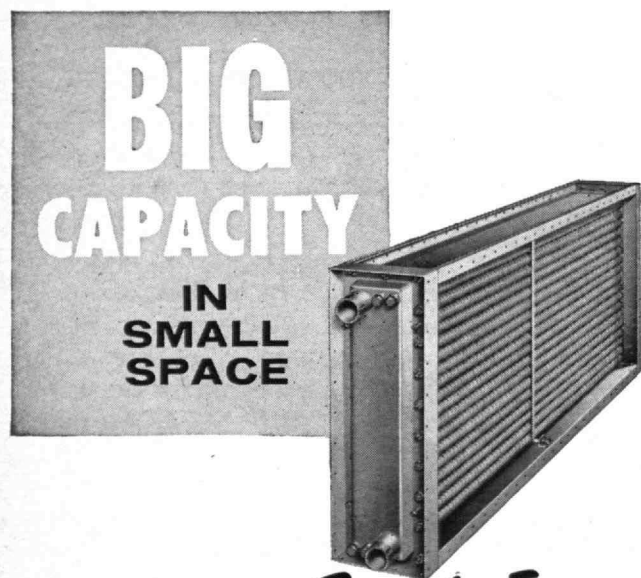
Although the M.I.T. researchers have identified histone as the control element for the lactic dehydrogenase gene, they still have no idea what agent controls the histone production. They believe, however, that the control circuit is a closed loop with lactic dehydrogenase itself playing some role in triggering histone. Evidence from biological research has been mounting in recent years to support the idea that genes are controlled—turned off and on and adjusted in volume—in part, at least, by biochemical feedback circuits that are somewhat analogous to automatic electrical control circuits.

Much of the research in gene control so far has been done with bacteria, yeasts, molds, and plants and a classic example of biochemical control is the production of the amino acid tryptophan by a bacterium called *Escherichia coli*. In *E. coli* cells, tryptophan is the end product of biochemical reactions that require, as a first step, an enzyme, or catalyst, known as tryptophan synthetase. When the amount of tryptophan in the cell reaches a critical level, the tryptophan itself turns off the gene that directs production of the enzyme, thus shutting down tryptophan production.

(The process has been compared to the one by which a home thermostat shuts off the furnace when the heat reaches a predetermined level.)

Cell biologists visualize the chromosomes as long chains made up of hundreds of nucleic acid molecules, each molecule representing what is thought of as a gene. Individual genes are responsible for directing cell activities. Some genes, for example, direct production of proteins from amino acids and most of these proteins are enzymes which catalyze the chemical reactions of living organisms. Given this idealized view of the genetic production machine, molecular biologists are driven to ask about control. What turns genes on when needed and what turns them off when the need is filled? What adjusts the volume of production? Why don't cells go on producing proteins without end?

Dr. Sizer believes that there are probably several different ways in which gene control is brought about, but among the more important and active are biochemical feedback control circuits such as that seen in histone control of lactic dehydrogenase.



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A New Transportation Proposal

M.I.T. STUDENTS this spring proposed that a linear induction motor hundreds of miles long be built to meet the Northeast Corridor transportation challenge. Such a motor was but one of many distinctive features of the "Glideway" concept developed in an interdepartmental Systems Design course. Forty-four students, with Kent Groninger, '63, as Project Manager, organized themselves into groups to consider various aspects of the transportation needs of the area extending from Boston to Washington and developed the Glideway concept under the watchful eyes of eight professors.

For several months some members of the M.I.T. Faculty have been studying the complexities of providing faster, safe, and acceptable door-to-door transportation for the Northeast Corridor's rising population. The problem is clearly interdisciplinary and was chosen, therefore, as one in which students of electrical, mechanical, and civil engineering, aeronautics and astronautics, city planning, architecture, economics and political science could work together.

One group considered vehicle design, another the glideway, another the network needed, and still others the economic, political, control, architectural, and city planning aspects of a transportation system capable of meeting future requirements. Their findings were presented orally to members of the Faculty and a large group of visiting authorities on transportation.

The Glideway that the students envisaged would be a new mode of traveling. It would include vehicles which individuals could summon when needed, vehicles into which you could drive your family car, and others resembling buses for passengers traveling in parties. All three kinds would be whisked along at superspeeds on cushions of air rather than rails. From each one a fin would protrude into a slot lined with coils producing magnetic fields, which would propel the vehicle in the same manner that the armature is spun in a rotary induction motor.

Traffic would be centrally controlled. Vehicles would go nonstop from Boston to Washington in an hour and 40 minutes when not swung off into secondary loops to local interchanges. Construction of the main line would cost approximately four billion dollars, one group estimated, but the fare for an individual through passenger might be only \$12.40.

Much of the computational work was done on a computer, and the network specialists gave the program that they devised the acronym NEPTUNE, signifying "Network Evaluation Program to Unite the Northeast."

Professor William W. Seifert, '47, was chairman of the Faculty group supervising the students' work, and it included Professors Dwight M. B. Baumann, '57, E. Farnsworth Bisbee, Aaron Fleisher, '47, Imre Halasz, Robert J. Hansen, '48, E. Eugene Larrabee, '48, and Robert C. Wood, only two of whom serve in the same academic department.

(Continued on page 64)

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Plowshare, the Government's program to develop peaceful industrial uses of nuclear explosives, opens wide new vistas of opportunity to the professional engineer.

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Holmes & Narver's interest in the Plowshare Program is an outgrowth of many years of service to the Atomic Energy Commission in the nuclear testing program. As an expression of our interest, we recently published a brochure which explores in some detail a few of the possible applications of this new power. We would be pleased to send you a copy on request.

James T. Holmes — MIT '14

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Trend of Affairs

(Continued from page 63)

The Class Reunions

SIXTEEN M.I.T. classes held reunions the weekend of June 11—two on campus, three elsewhere in Cambridge, nine on Cape Cod, one in the Berkshires, and one in New Hampshire. The largest groups were those representing the Classes of 1915, 1925, and 1940. Mrs. Mary Elsa Plummer Rice, '15, from Paris, and Masaru Kametani, '25, from Tokyo, were among those who came from afar.

Questionnaires sent to the 25th anniversary class showed that the average age of its members is now 47, the average number of children three, and the average annual income \$25,324. Most members reported that they were using their technological educations in their businesses and professions. Many are in the aerospace industry; 281 reported that they hold supervisory positions directing the work of a total of 152,192 persons in government, military service, or industry.

In the class book, the President, Franklin E. Penn, '40, observed:

"We have participated in a tremendous expansion in the scope and influence of science and engineering. We have seen the development of rapid world-wide communication via satellite, and of high-powered computers which more and more are being programmed to run our

tools and plants, our business, and even our lives.

"We have watched the birth of the rocket and even now stand in awe on the very threshold of interplanetary travel. We have seen and felt the emergence of nationalism on a world scale and have observed the birth of numerous new nations. . . . And who knows what lies ahead?"




104 Complete Lowell Courses

EDWARD M. SWARTZ, chairman of the board and chief executive officer of the Keystone Camera Company, Inc., of Dorchester, Mass., was the principal speaker at the graduation exercises of the Lowell Institute School held on May 27 in Kresge Auditorium. Mr. Swartz is a member of the School's Class of 1915 and spoke of his experiences there and in establishing his company.

Graduates also heard brief talks by Philip A. Stoddard, M.I.T. Vice-president—Operations and Personnel, and Ralph Lowell, Trustee of the Lowell Institute, who also presented graduate certificates to 41 candidates and certificates for completing supplementary courses to 63 other students.

Salvatore Gianino, of the School's Class of 1929, presented the Charles Francis Park Award to John J. Drobot, Jr., as the outstanding graduate. F. Leroy Foster, Director of the School, presided at the exercises.

(Continued on page 66)



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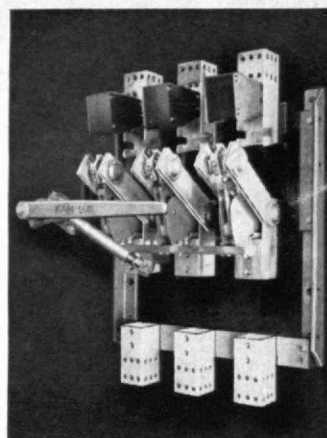
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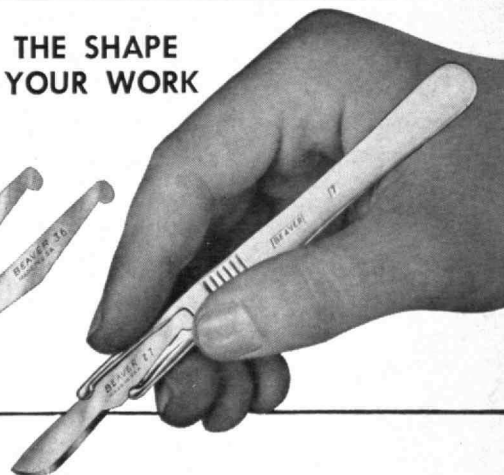
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Trend of Affairs

(Continued from page 64)

The Alumni Council's Meeting

DR. BENSON R. SNYDER, Psychiatrist in Chief in the M.I.T. Medical Department, and William E. Griffith, of the Institute's Center for International Studies, were the speakers at the 380th meeting of the Alumni Council held on May 24 in the Faculty Club.

Dr. Snyder has been doing research at M.I.T. and elsewhere to determine student attitudes and has found, he said, that much of the character of a university is determined by the kind of communication that exists between faculty and students.

Dr. Griffith, the author of the recent book, *The Sino-Soviet Rift*, said that advances in technology have produced an increasing discrepancy between the military power of nations and their political pretensions, and he cited Russia, China, and the underdeveloped countries as points of concern to the United States.

The return of China as a great power is probably the greatest international development of our times, Dr. Griffith said, because the Chinese have world-wide ambitions. The only course for America, in his opinion, is to convince the Chinese that the U.S. is capable of carrying through a policy of containment.

Professor Emeritus Joseph C. Riley, '98, read a resolution on the death of Edward S. Chapin, '98.

The Ralph T. Jope Cup

HARVARD University lightweight crews won the Ralph T. Jope ['28] Cup this spring in the Eastern Association of Rowing Colleges spring rowing championships on Lake Quinsigamond, near Worcester, Mass. The trophy goes to the EARC college whose lightweight crews score the highest total of points. M.I.T. crews placed third this year in the Jope Cup competition, which Cornell won in two previous years. Altogether, 65 crews from 14 colleges participated in the regatta on May 15.

M.I.T. first presented the Jope Cup to the association in 1963, in honor of Mr. Jope, who for many years was Secretary of the Institute's Advisory Council on Athletics, a position in which he served in effect as director of athletics. Long a partisan of rowing, Mr. Jope is business manager of *The Technology Review*.

Another M.I.T. trophy also is awarded through the EARC, whose president is Professor Ross H. Smith, M.I.T. Director of Athletics. This award is the Rowe Cup. Contributed in the thirties by Charles Hayden, '90, to the Advisory Council on Athletics, it was placed in competition in 1946 in memory of Dr. Allan Winter Rowe, '01, who (preceding Mr. Jope) was Secretary of the Council for many years prior to his death in 1934. The Rowe Cup goes to the college whose freshman, junior varsity, and varsity crews score the highest combined total of points.

(Continued on page 68)

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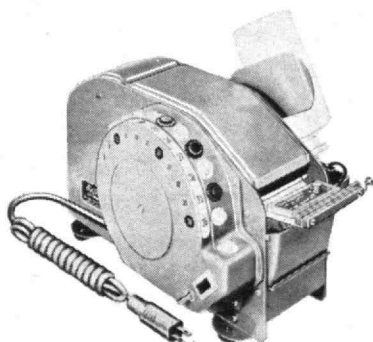
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Vocational Education Planning

NATIONAL and international experts in occupational education met at M.I.T. this spring to discuss plans for an intensive summer study project at the Institute. They took part in a two-day Planning Conference on Vocational Education under the chairmanship of Nathaniel H. Frank, '23, M.I.T. Professor of Physics.

The conference was initiated by a request to James R. Killian, Jr., '26, Chairman of the M.I.T. Corporation, from State Senator Kevin Harrington, Chairman of the Special Commission Relative to Improving and Extending Educational Facilities in Massachusetts.

Vannevar Bush, '16, Honorary Chairman of the M.I.T. Corporation, spoke at a conference dinner. About 100 persons attended the meetings at the invitation of President Julius A. Stratton, '23. They included Stanley Backer, '41, Professor of Mechanical Engineering at M.I.T.; Dean Gordon S. Brown, '31, of the M.I.T. School of Engineering; Andrew Canzanelli, '27; Frank C. Colcord, Jr., '64, special assistant to the Chairman of the M.I.T. Corporation; Nathan H. Cook, '50, M.I.T. Associate Professor of Mechanical Engineering; Merton C. Flemings, Jr., '51, Associate Professor of Metallurgy at M.I.T.

Also: H. C. Gunning, '26, of British Columbia Institute of Technology; Harry C. Kelly, '36, Dean of Faculty

at North Carolina State University; Robert W. Mann, '50, Professor of Mechanical Engineering at M.I.T.; Frederick J. McGarry '50, Associate Professor of Civil Engineering at M.I.T.; Joseph Mindel, of the M.I.T. Lincoln Laboratory; Robert M. Solow, M.I.T. Professor of Economics; Professor Robert I. Hulsizer, '48, Director of the M.I.T. Science Teaching Center; and Malcolm K. Smith, also of the Science Teaching Center.

European Lecture Tour

SEVEN M.I.T. engineers and scientists were scheduled to give a series of lectures in Europe this summer on space guidance, navigation and control. They are from M.I.T.'s Instrumentation Laboratory and have been responsible for various aspects of the guidance system that the laboratory is developing for Project Apollo.

Professor Charles S. Draper, '26, founder and Director of the Laboratory, headed the group, which was to speak in Wiesbaden and Brussels and consult with European scientists and engineers in Amsterdam, Paris, and Rome. The lectures were sponsored by the Avionics Panel of the Advisory Group for Aeronautical Research and Development (AGARD), which is part of NATO.

Other members of the group were to be David G. Hoag, '46, Richard H. Battin, '45, John E. Miller, '53, D. Alexander Koso, '56, Albert Hopkins, and Wallace E. Vander Velde, '56, M.I.T. Associate Professor of Aeronautics and Astronautics.

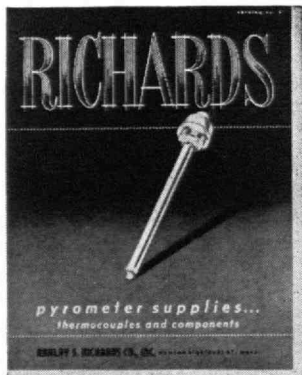
(Concluded on page 71)

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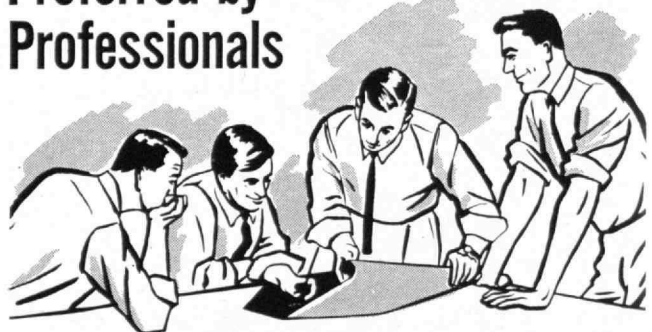
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Trend of Affairs

(Concluded from page 68)

Sounds in the City

IN A CITY, sound travels best when it is aimed straight down a street, a recent study in Boston shows. Thus, according to a report in the *Journal of the Acoustical Society of America*, a system of block-by-block loudspeakers may be the best way to alert and inform the public in times of emergencies.

Most outdoor signaling systems have a few powerful and centrally located sound sources, such as roof-top sirens, but the sirens' wail must travel a roundabout path to the listener in the street and the sound is scattered and refracted by buildings.

Although studies in other cities have measured sound attenuation from sirens, the U.S. Office of Civil Defense sponsored the new research to develop a reliable means of blanketing large urban areas with intelligible speech communication. During one summer and winter, Dr. Francis M. Wiener, Charles I. Malme, '58, and Creigh-

ton M. Gogos, of Bolt, Beranek and Newman, Inc., boomed spoken messages along Summer Street, in South Boston, and Commonwealth Avenue in the Back Bay section. Trained listeners positioned in the streets wrote down words as they heard them.

When traffic was moderate, the researchers found that a street-level loudspeaker could achieve satisfactory communication at a range of 700 feet, with small effects from wind. They also noted the absence of "shadow zones" of silence such as occur in open terrain.

Engineering Fellowship

THE SCHLUMBERGER Foundation of Houston, Texas, has renewed its grant to M.I.T. for support of the Schlumberger Fellowship in Electrical Engineering. The three-year renewal was announced by Captain Clifton Iverson (USN, Ret.), Executive Secretary of the Foundation, and Professor Peter Elias, '44, Head of the M.I.T. Department of Electrical Engineering.

The fellowship for the 1965-1966 academic year goes to William R. Brody, '65, of Stockton, Calif., who will begin graduate studies in September.

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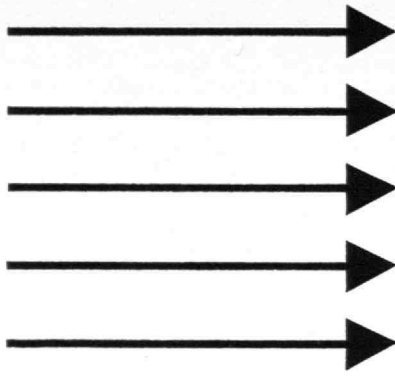
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Class News



'95

Our M.I.T. '95, Eighty-plus club: of the 21 members on December 25, 1959, we now have 10 members living. All are in their 90's and live in the U.S.A. from the Atlantic to the Pacific. Best wishes to you all.—**Andrew D. Fuller**, Secretary, 120 Tremont Street, Boston, Mass.

'96

Henry Rogers Hedge died on April 24 at his home, 105 Rockwood Street, Brookline. He was a native of Plymouth, where memorial services were held at the first Church Unitarian; Dr. Charles C. Forman, Pastor, officiated, and the Class was represented by the secretary. He was the last of three children of Attorney William Hedge and Catherine Elliott (Russell) Hedge, both natives of Plymouth. The eldest, Lucia Russell Hedge, was born in 1872, and the twins, Henry and William Russell Hedge, were born January 13, 1876. They were brought up in the former Hedge house, now occupied by the Plymouth Federal Savings and Loan Association. William died on April 19, 1943, and Henry succeeded him as president of the Boston Insurance Company, with which company they had both been associated since soon after graduating in Course IX, M.I.T., in 1896. Henry had been associate secretary of the Class. He was vice-president of the Pilgrim Society, and a member of the Mayflower Descendants, the Country Club in Brookline, the Union Club in Boston, and the Plymouth Yacht Club. A few years ago he gave up golf but continued to fish from his power boat. He is survived by a son, Elliott Russell Hedge of Lincoln, two daughters, Mrs. Franklin T. (Catherine) Hammond, Jr., of Cambridge, and Mrs. George M. (Priscilla) Kunhardt, Jr., of Frankestown, N.H.; eight grandchildren, and two great-grandchildren.—**James M. Driscoll**, Secretary, 129 Walnut Street, Brookline, Mass.

'97

An attempt to get out Class News: Assistance from classmates? Refuse./ So this line or two/ You'll have to make do,/ A very poor sort of excuse.

A certain professor of Tech/ With computer attempted a check/ But results that he sought/ All came out to naught/ As he knew not a bushel from peck.

Ye editor of The Review/ Should nicknames of the past quite eschew./ We'll admit Tubby was fat,/ But he was not a

cat./ So the name of Tabby won't do.—**George R. Wadleigh**, Acting Secretary, 70 Flower Avenue, Hastings-on-Hudson, N.Y.

'98

In the June notes we mentioned briefly the passing of our late Class President, **Ed Chapin**, and that details were not available in time for insertion in that issue. We now can report further. At the services held in the Mt. Vernon Congregational Church at the corner of Massachusetts Avenue and Beacon Street in Boston, on Saturday, April 17, the Class of '98 was represented by Professor **Joseph Riley**, **Fred Dawes** and **Fred Jones**. Fred Dawes was driven down from Hudson by his son Robert, M.I.T. '26, who also attended the services. Under date of April 18, Ed's sister, Marion, wrote a kind letter of thanks which we will share with you: "Dear Fred—Edward would have been so pleased to think that the Class of '98 sent such a lovely floral display in his memory. He was so devoted to the Class and how nice that you all came to pay your respects to him. Thank you so very much. With kind wishes, Sincerely, Marion." Also, under date of April 22, Elizabeth Furber of Gradyville, Pa., Ed's daughter, wrote to your secretary a kind letter which we quote in part: "Please express to the Class of '98 our appreciation of the lovely flowers sent for Father's services at the church. It was even more comforting to see you, Mr. Riley and Mr. Dawes, his classmates, there. With kindest regards from Holden and myself, Yours sincerely, Elizabeth Furber."

We are indebted to Elizabeth for sending to us, at our request, an excellent summary of Ed's history which is applicable for our class notes. We quote: "Edward Samuel Chapin, '98, former secretary of the Class and president since 1963, died last April 14, at Marblehead, Mass. Born in Cambridge on October 22, 1877, he was graduated from Boston English High School in 1894. On graduating from M.I.T., he began his career as consulting chemist and expert on dyes with the American Dyewood Company. In 1904, having invented a new formula for the dyeing of khaki, he made his first trip to Europe to sell the patent, since at that time an American dye manufacturing industry was practically nonexistent. He became known for his consulting work during World War I when he traveled widely in the United States solving dyeing problems after the import of German dyes had ceased. From 1920 to 1924 he resided in Paris as the representative of the American Textile Alliance in connection with the German reparations settle-

Happy Birthday

In July one alumnus will celebrate his 95th birthday; three will be 90 years old; six will mark their 85th birthdays; and thirteen will blow out 80 candles.

July, 1870—**ALFRED M. BROOKS**, '97, on the 19th.

July, 1875—**ROGER W. BABSON**, '98, on the 6th; **WILLIAM BINLEY**, '97, on the 27th; **CHARLES F. WHITING**, '99, on the 27th.

July, 1880—**CHARLES G. TUFTS**, '01, on the 8th; **FRANK A. SCOTT**, '10, on the 10th; **FRANK F. HASBROUCK**, '06, on the 11th; **LOUIS W. GRAVES**, '03, on the 24th; **WADE L. WETMORE**, '02, on the 27th; and **ALBERTO MADERO**, '02, on the 29th.

July, 1885—**WARREN HASTINGS**, '07, on the 1st; **LESTER C. GREENWOOD**, '10; **WALTER G. PFEL**, '08, on the 1st; **HARDY M. COOK**, '09, on the 2nd; **JOHN W. ANDERSON**, '06, on the 3rd; **ERNEST WHITTEN**, '08, on the 8th; **KARL W. RICHARDS**, '07, on the 10th; **EDWARD G. LEE**, '07, on the 14th; **SAMUEL R. T. VERY**, '07, on the 18th; **S. GILBERT EMILIO**, '07, and **GEORGE WEINHAGEN, Jr.**, '09, on the 19th; **WALTER SMITH**, '06, on the 22nd; and **ALFRED BABCOCK**, '08, on the 31st.

ment concerning dyes. At this time he also made frequent trips to Washington to advise on the setting up of tariff rates to protect the nascent American dyestuff industry. At various periods during his career, he was also associated with the Calco Chemical Company of Bound Brook, N.J., and the W. C. Durfee Company of Boston. He was also a consultant for the Solvay Company of Switzerland. He retired in 1955, having developed a number of patents for fixing salts, useful in dyeing mixed synthetic fabrics. He was a charter member of the American Association of Textile Chemists and Colorists, and a member of the Drysalters Club and of the Chemists Club of New York. Throughout his life, he was active in Congregational church affairs and served as moderator and deacon of the Mount Vernon Church of Boston. In 1903 he married Margaret Crossman Littlefield of Boston, who died in 1927. His younger daughter, Margaret Louise, died in 1934. He is survived by his elder daughter, Elizabeth (Mrs. Holden Furber), of Gradyville, Pa., and by his sister, Marion Louise Chapin of Boston. Interment was in the family lot, Mount Wollaston Cemetery, Quincy, Mass.

We have the following new addresses as of April, 1965: **Roger W. Babson**, 90 Seaward Road, Wellesley Hills, Mass. 02181.; **Lyman F. Hewins**, 6306 Hunt-over Lane, Rockville, Md. 20850.; **Robert Lacy**, Squirrel Island, Maine. 04570.—**Frederic A. Jones**, Secretary, 286 Chestnut Hill Avenue, Brighton, Mass. 02135.

'99

Henry F. Leavitt, I, was born in Saco, Maine, on June 8, 1876, and died in New Haven, Conn., on March 31, 1965. Henry started with the James Sugden Company,

the underground cable specialists. In 1906, as an engineer with the United Illuminating Company, he directed the laying of the underground distribution systems in New Haven and Bridgeport. In 1919 he became superintendent of distribution; in 1939 general superintendent of distribution; and in 1941 chief engineer; retiring on June 8, 1946 after 40 years with the company. He is survived by his wife Nellie Blakeslee Leavitt and three nephews, Lawrence Graves of Saco, Richard Leavitt of Portland, Maine, and Prescott Leavitt of Avon. A son Francis H. Leavitt died in 1930. . . . **Jacob Stone, IV**, sends greetings from Palo Alto, Calif. . . . Miss **Harriet Faxon** of New York, speaks of the remarkable growth of the Institute from the one building on Bolyston Street to the constantly increasing campus of the present day. At 96 years of age her script reminds us that good writing was an essential part of a good education. Our class roll contains 37 names: I-2; II-7; III-1; IV-8; V-2; VI-7; VII-3; VIII, XI, XIII-1 each; Special-4.—**Percy W. Witherell**, Secretary, 1162 West Street, Wrentham, Mass.

'01

I had a report from **Lyman Bigelow** in Hawaii but with no special news. . . . I had a long letter from **Ed Brigham** telling of his doings and reading, which reading he recommends to all of us older people. . . . **Ed Davis** is still doing historical research at his plant. He works every day and all day except Friday when he stops at noon and meets his friends at the club for contract playing in the afternoon. . . . I shall be glad to hear from any of you about your doings. No more notes until fall which will give you time to think of more material.—**Theodore H. Taft**, Secretary, Box 124, Jaffrey, N. H.

'02

Charles W. Kellogg (Bill) replies to my letter on his 85th birthday: "I realize that you hate to have nothing but obituaries for the '02 class notes in The Review but perhaps that is inevitable. From the figures in past M.I.T. registers, I have developed a curve showing the proportion of each Tech class that was alive at a given age. The average age of our class is now about 85 and the curve indicates that at that age about 15 per cent of the Class are now alive. However those 15 per cent are naturally interested to hear how the others are doing. As you know, I spent all of my active business life in the electric utility business—having lived eight years in New England, nine years in Texas, five in Iowa (at the Keokuk Dam) and 25 in New York. The last 10 years, before I formally retired (at age 66), I was president of the Edison Electric Institute, and as such, visited every state in the Union. Thirty years ago, in preparation

for subsequent retirement I acquired our present plantation, "Langshaws," on the eastern shore of Maryland—a very fortunate purchase as people seem to live forever in this section. I still have some business connection left, as a board member of Virginia Electric and Power Company which I have been for 40 years and which occasions my driving to Richmond every month. I feel as well as I ever did and attribute this to keeping eternally active, thus having no time to bother about the fast recurring birthdays. In fact I recommend this as the antidote for so-called "old age." Beside running our 400-acre farm, which I am ashamed to say, never shows a profit, I am busy with many public interests which abound in this, as any other, community. I am treasurer of five such organizations. Another activity that takes time is the Episcopal Church Parish of which I have been senior warden and lay reader for over a decade. My wife and I try to make a trip to Europe every few years and to the South every winter, in all cases driving ourselves. I have quit some things, like sitting in a duck-blind and playing golf, but there are a lot of other worth-while things to do. We have 13 grandchildren and five greats, all of whom live within a few hundred miles. My life span covers almost exactly, the electrical age, as I was born in 1880 and Edison built his first electric power station in New York in 1879. The present size of the industry he started now staggers the imagination. We of '02 have lived through a thrilling time in history." . . . **Arthur Nichols, IV**, reports from Rochester, Minn., that he is happily located near his children as both his son and son-in-law are associated with the Mayo Clinic.—**Burton G. Philbrick**, Secretary, 18 Ocean Avenue, Salem, Mass.

'03

Well, classmates, in your peaceful abodes in Tropical Florida, the open vistas of Texas landscapes and the cool air of the California canyons, offsetting the torrid heat of July, your secretary is aware that you are anxiously awaiting the report of our June commencement with its customary throng of excited alumni, the thrilling reunion of our classmates and awesome aspects of buildings that ever increase on our M.I.T. domain. However, this July issue of The Review is the last until the winter awakening and the November summary of summer happenings. . . . Our spring here in Cambridge is only now, in May, bursting forth in blossoms from delayed foliage and periods of summer temperatures. . . . The enormous construction about our M.I.T. campus is steadily progressing. On Massachusetts Avenue the student center is most striking with its unique architectural form in contrast to the apparent stoical, but artistic, facade of our familiar central structure. To classmates of the 60th vintage looking back at the meager yet scholastic atmosphere of Rogers and Walker, the enormous cluster of new M.I.T. build-

ings and the extensive terrain embracing the new Technology Square seems overwhelming in comparison to our modest former vision. . . . Another report from our energetic Chemistry Club luncheon of New York comes through **Clarence Joyce, V**, on April 23. It shows ample attendance with **George Wadleigh, '97**, **Harry White, '99**, and **Joyce and George Dexter, '08**, most active. Many new features pertaining to the chemistry profession were duly discussed. **George Wadleigh** noted that he is a great-grandfather for the first time with a boy. **Clarence** leaves on the Sylvania for Liverpool on June 18. He will motor from Rotterdam through Germany and Austria to Basle, Switzerland. He will use a plane to get to England with his friends where he will stay until September 1 when he intends to return home.

A note from **Tyrrell Cheney, II**, said that he had recently met **Richard Lawton, I**, of Plainfield, N.J. He reports that Richard is having serious eye trouble that now confines him to his home. . . . Our classmate **George R. Gaenslen, III**, passed away February 15, 1965, and we await his obituary. . . . Our birthday greetings go to **Arthur S. Gibbs, VI**, for his 85th on May 13.—**John J. A. Nolan**, Secretary, 13 Linden Avenue, Somerville, Mass.; **August H. Eustis**, Treasurer, 131 State Street, Boston, Mass.

'04

A note from **Harry Rollins** included this information. "A week ago, we had a visit for a day from **Gus Bouscaren**, Mrs. Bouscaren and their married daughter who has a place in Palm Springs; they drove and spent two nights, one in Coronado and one in La Jolla. We were delighted to have them look us up and it is our hope that they will return their call when next in California."

The name of **Ralph Hayden** appeared in the Boston Herald recently and brought to your class secretary some recollections. It seems that **Ralph, Jr.** has been made executive vice-president of The Foxboro Company of Foxboro, Mass. His father sat beside your secretary at all the classes where the name began with "Hay" and we soon became well acquainted. The class will congratulate **Ralph, Jr.** on his promotion. . . . The only other news to report is the death of two classmates—On March 12, 1961, **J. Lawrence Lyon** of East Crawford Street, Ebensburg, Pa., and in December, 1964, **George G. Hall** of Stoney Creek, Conn.—**Carle R. Hayward**, Secretary, 120 Beacon Street, Boston, Mass.; **Eugene Russell, Jr.**, Treasurer, 82 Stevens Road, Needham, Mass.

'06

In mid-May here in New England spring has been busting out all over. Every tree and shrub and plant that can blossom has been doing so almost simul-

taneously and it has been beautiful wherever you look. These notes are a little late in filing because Marion and I were away a few days, enjoying a "relaxing interlude"—as their ad recommends—at Northfield Inn, going and coming through the famous apple blossom country. While at the Inn we drove up into the edge of Vermont and called on Betty and **Stew Coey**, VI, at their new home just outside East Wilmington, which they share with their married daughter. We found Betty quite recovered and had an enjoyable get-together. . . . Early in May came a report of the death on March 11, 1965, of **Ralph Nelson Sargent**, X S.B. in Silver Spring, Md., after a long illness. He was born April 1, 1884, in Lynn, Mass., prepared at Lynn English High School; entered and graduated with us. He was a member of the mechanical engineering and chemical societies and his thesis was on "The Properties of Certain Alloys of Iron and Manganese, and their Production in a Vacuum Furnace," with **Colby Dill**. For a year or so he was with the Burgess Sulphite Fiber Company in Berlin, N.H., and for a few years was assistant superintendent with Pusey and Jones Company in Wilmington, Del. Then began a long stretch with the Roesler and Hasslacher Chemical Company, at first in Perth Amboy, N.J., in 1916 as works manager of their number two plant, later as assistant to the second vice-president in Woodbridge, N.J. For 10 years or more he maintained an office as industrial engineer in Plainfield, then joined the General Chemical Company at 40 Rector Street, N.Y.C., becoming research chemist, and retiring by or before 1955 to Land-O-Lakes, Fla. After eight years there and in failing health, they moved to Silver Spring, Md. In 1909 Ralph married Elizabeth Bockins, who survives, and they have a son Ralph, and two daughters, Mary Taylor and Nancy

Lee Kent. A note of sympathy has been sent to Mrs. Sargent, who thoughtfully wrote to me to report his passing, and the children.—**Edward B. Rowe**, Secretary-treasurer, 11 Cushing Road, Wellesley Hills, Mass. 02181.

'07

I have had two additional negative replies to my reunion request. One was from **Ernest A. Miner**, I, who has been living at Sebring, Fla. It seems that the surveyors working on a new four-lane highway, #41, discovered that half of his house was on his neighbor's land. The house could not be moved, so Ernest had to purchase two lots of land at a very high price on which to build a new home. The effort was too much for him, and he was hospitalized for seven weeks but reports he is in fair condition at present. His new address is 262 West Marion Avenue, Punta Gorda, Fla. 33950. Please note this on your address sheet. . . . **Willis G. Waldo**, I, wrote to me about his activities in engineering in Florida and Central America. He is also very active in a half-dozen capacities in connection with the First Baptist Church at West Palm Beach which, this past March, dedicated a new 1.2 million dollar sanctuary. They have a very unique open air chapel, by the lake, which seats 1,700. Built on a section of filled-in land jutting over 300 feet into Lake Worth, the chapel is distinctive in its simplicity. Surrounded by a spacious lawn, Florida palms, and winding sidewalks, it has become a mecca for out-of-town visitors. This past Easter Sunday, 9,000 persons worshipped at this new church and the chapel. Willis is also interested in the establishment of a Bap-

tist College in connection with the new church. I quote a paragraph from his letter: "Since writing you last, I have spent some time in Central America, where there are inviting prospects for the establishment of new industries if, and when, the political situations there become stable enough to permit."

There were four members of 1907 who had birthdays in May. **Jim Gaylord** celebrated his 85th. The other three were all octogenarians. One of these was **Mrs. James Beck (Isabel Worthington)**, a former '07 co-ed. . . . **Don Robbins** and your secretary had the privilege of attending the Inauguration Convocation of Barrington College, Barrington, R.I., at which time the president of the college, Howard W. Ferrin, was elevated to the position of chancellor of the college, after having served 40 years as its president. Your secretary continues as a trustee of this college and also as chairman of its building committee. At present, a dormitory to house 160 students is under construction and is to be completed in time for the new school year in September. In June, a student union building is to be erected adjacent to the recently completed Easton Dining Hall. . . . I have had enough inquiries about a new class list of living members to warrant having one printed. I will get this list to you early in July. . . . Another reminder that I have extra copies of some of the class reunion photographs taken by an official photographer. They will be sent to you promptly upon request. I also have two copies of the senior portfolio. Although not in perfect condition, they are quite usable. Yours for the price of postage and will be sent on a first come, first served basis.—**Philip B. Walker**, Secretary and Treasurer, 18 Summit Street, Whitinsville, Mass.; **Gardner S. Gould**, Assistant Secretary, 409 Highland Street, Newtonville, Mass.

Deceased

HENRY ROGERS HEDGE, '96, April 24*
EDWARD S. CHAPIN, '98, April 14*
HENRY F. LEAVITT, '99, March 31*
EDWIN F. CHURCH, JR., '01, November 30
SAMUEL C. LIND, '02, February 12
GEORGE B. SEYMS, '03, March 6
GEORGE G. HALL, '04, December*
WILLIAM A. HALL, '05, December 2
WILFRED N. OLIVER, '06, November
RALPH NELSON SARGENT, '06, March 11*
CARL HALL, '08, March 7*
PERCY HANDY, '08, January 19*
GEORGE I. EMERSON, '09
WILLIAM G. FICK, '09, March 15
JAMES J. TOBIN, '09, May 5
R. S. BICKNELL, '10, February 15*
ROBERT S. BREYER, '10, October 19*
LAWRENCE B. CHAPMAN, '10, May 13*
HERBERT E. FOWLER, '10, May 7*
CLARENCE W. DOW, '11, March 13
FREDERICK H. DIERKS, '12, April 28
HERBERT WOEHLLING, '12, May 24*
RALPH D. BATES, '14, March 19*
DALE R. MCENARY, '14, February 27*
WILLIAM E. ASH, '15, November 18
ROBERT A. HOWE, '15
BRUCE N. STIMETS, '16, January 1

HAROLD V. CHISHOLM, '17, November 13
ELIOT W. GIFFORD, '17, February 28, 1964*
DONALD W. MACARDLE, '18, December 23
HANS F. B. ROESSLER, '18, January 30*
DAVID P. BROWN, '20, April 30*
LINCOLN B. CHAMBERS, '20, March 28*
ARTHUR DOPMEYER, '20, March 25*
CLYDE A. NORTON, '20, April 25*
GERALD A. COUNTS, '21, July 30, 1964*
HAROLD D. MOORE, '21
ARTHUR W. SKILLING, '21, March 20
LEWIS F. ACKER, '22, January 28, 1963
CLIFFORD BANTA, '22, April 5*
FLETCHER M. DEVIN, '22, September 29
CLAYTON D. GROVER, '22, March 22*
CARL A. JOHNSON, '22, 1962*
JOHN C. MASON, '22, June 6, 1961*
HOMER F. RICHARDS, '22, December 13*
SIBYL STONE, '22, August 8*
HAROLD H. EDER, '23, April*
SAMUEL S. ELKINS, '23, March 12*
HAROLD V. HARPER, '23, April 14, 1964*
PHILIP W. POWELL, '23, February 17
AUBREY W. SEELS, '23, December 17*
JOHN G. BEAGAN, '25, April 6
CALVIN T. DURGIN, '25, March 27*
FRANCIS X. MAHER, '25, January 6
RICHARD W. AVERY, '26, April 20, 1963

CLARENCE J. LEBEL, '26, April 14
WILLIAM R. FREDERICK, '27, January 21*
THOMAS E. HEGARTY, '27, March 14*
PALMER D. KOUNTZE, '27, June 2, 1963*
ARCHIE PROTOPAPAS, '28*
ROBERT BALDWIN, '30, January 16
ROBERT A. MILLER, '30, April 6, 1963
CHARLES W. ROBINSON, '30, September 17
ENRIGHT A. ELLIS, '31, January 17
CHARLES W. RANKIN, '31, April 8
PERCY S. GARDNER JR., '33, 1964
G. ALLAN CREIGHTON, '35, May 1
ROBERT K. KULP, '35, October 21*
HERMAN W. LIEHR, '35, July 17, 1964
DANIEL E. FARMER, '36, February 7
RUSSELL R. KLANDERMAN, '36, December, 1964*
JAMES O. BAKER, '37, September 27, 1963
HERBERT LEADERMAN, '38, February 20*
SOHL SPARER, '40, February 1*
F. STANDISH KELLEY, '41
LEON FLANDERS, '42, August 3*
ALBERT H. AMON, '49, August, 1964
THOMAS GOODMAN, '55, May, 1964*
RALPH E. MANCHESTER, '58, August 14, 1964
PAUL W. DANELL, '59, 1963
CHARLES R. CAVANAUGH, '62
JAMES H. SKELDON, '63, April 11

'08

Our second dinner meeting of the 1964-65 season was held at the M.I.T. Faculty Club, Cambridge, on Wednesday, May 5, at 6:00 P.M. Attendance was light, in fact we barely had a quorum. **Bunny Ames, Bill Booth, Nick Carter, Myron Davis** and Mrs. Davis showed up. Several of our regulars were still vacationing in the South. We met in the cocktail lounge and while enjoying our favorite tonics with crackers and cheeses from the buffet we talked over our winter doings and the news of our absent brothers. About 6:30 P.M. we moved into private dining room six where we had our usual excellent dinner. . . . We are sorry to report the death of **Carl Hall**, Concord, N.H., on March 7, 1965. He had not been well for several years but had made our 50th Reunion which he greatly enjoyed. We also had news of the death of **Percy Handy** in January 19, 1965, at Rutland, Mass. . . . We wish you all a most enjoyable summer—**H. L. Carter**, Secretary, 14 Roslyn Road, Waban 68, Mass.; **Joseph W. Wattles**, Treasurer, 26 Bullard Road, Weston 93, Mass.

'09

We have received a letter from Dr. Norman W. Loud, **Francis Loud's** brother, whom he was visiting in Edgewater, Fla., at the time of his death. He wrote that he "was grateful for your letter expressing your deep regard for Francis. He was devoted both to his class and to the college and enjoyed so much the activities of M.I.T. and especially the Class of 1909. We are having a memorial service for him on May 23 at 3 P.M. in the Congregational Church in Weymouth Heights where he was a deacon and a most active worker for many years. Rev. Theodore C. Schoonmaker, pastor of the church will have charge of the service. We expect to drive north and trust we may see you while we are in Weymouth. We appreciate your writing a tribute to Francis which we will cherish." The secretary has notified several classmates in the Boston area of the service and the class will be represented. . . . **Blanche (Mrs. Lewis) Johnson** writes from Rockland, Maine: "I have lost a longtime friend and my relations and friends are sorry. I will miss him much. Francis was a dear link between Lewis and me and was fond of my children. There are only two left of my wedding guests." . . . **Tom Desmond's** secretary has written us stating that Tom is the author of an article in the May issue of the Monitor, the official publication of Associated Industries of New York State, Inc., entitled "Public Office and Public Interest."

We received a five-column clipping from the Chicago News entitled "Humane Man of Steel," telling of the background, the activities, and accomplishments of **Ed Ryerson**. There were four photographs taken of him while sitting at his desk

in his Chicago office. The family began the steel business in 1646 when brothers **Martin and Joris**, after leaving their native Holland, settled in New Jersey and mined, smelted, and fabricated iron and steel. The chain drawn across the Hudson River at West Point during the Revolution to keep British warships from going upstream was made in the Ryerson forges, the iron having come from Ryerson mines. The steel business has been and still is the tradition of the Ryerson family. Ed, now 79, has retired and he and Mrs. Ryerson spend their winters at Palm Springs, Calif., and their summers on a farm at Deerfield where he raises Arabian horses. He has held many high positions such as chairman of the Inland Steel Company and first chairman of the Illinois Public Aid Commission. He has been an advisor to presidents, is an Episcopal vestryman, and a philanthropist. He has been awarded many high honors including medals and honorary degrees. There were three children, a daughter and two sons. One son, Morton, an Air Force lieutenant, was killed in action at Leyte during World War II. Ed's credo is: "It is the responsibility of each citizen to serve the community as his abilities, time and interests allow."

. . . The class still holds a high rating in the participation of the Alumni Fund. In the class range 1900-1909 it shares top honors with 1908 with 40 per cent and only 1911 with 49 per cent exceeds our percentage. . . . These are the last class notes until the November Review. We are grateful to those who have contributed during the year and the class officers wish everyone a most pleasant summer.—**Chester L. Dawes**, Secretary, Pierce Hall, Harvard University, Cambridge 38, Mass.; **George E. Wallis**, Assistant Secretary, Wenhams, Mass.

'10

Robert S. Breyer of Los Angeles, Calif., died on October 19, 1964. . . . **R. S. Bicknell** died on February 15, after six months' illness. . . . **Harold Akerly** sent me the notice of **Harold E. Fowler's** death on May 7, 1965. . . . **Lawrence B. Chapman** of Princeton, a professor of marine transportation and marine engineering emeritus at M.I.T. died on May 13, 1965. A native of Norwich, Conn., he graduated from M.I.T. in 1910. He worked for the Electric Boat Company on the design of high-speed naval craft during World War I. He was an assistant professor of mechanical engineering at the University of Maine from 1913 to 1915. In 1919, he went to Lehigh University as a professor of naval architecture. He came to M.I.T. in 1925. He was a recognized authority on ship operation and wrote a book entitled, "The Marine Power Plant." He retired in 1952. . . . **Harold Akerly** also asked in his letter, whether your secretary had been ill or away on a trip as he had noticed there were no class notes for the past two months. The explanation is that your sec-

retary has been on a trip.—**Herbert S. Cleverdon**, Secretary, 120 Tremont Street, Boston, Mass.

'11

A few days ago I received a letter from President **Howard Williams** appointing me class secretary and treasurer, succeeding **John Herlihy**, who has done so much for the Class but now wants to retire. President William's letter was written in Paris, France, where he is on an extended business trip through several countries. He expects to be back at 5045 Wilshire Boulevard, Los Angeles 36, Calif., by the middle of June. After considerable hesitation, I decided to accept the appointment, and hope this action meets with the approval of the Class. . . . I received a letter from **Frank Smith** of Honolulu written on a sheet of his personally decorated notepaper. He included the following comment on Hawaii: "If I were a young man I could never live here. It is a very isolated spot. In one week one can see it all—one road with short alternate around the island which is say 40 by 20 miles in size. Not much opportunity compared to the mainland for a young man." Of his own well being he continues: "We have a small house in a good 'Oriental' neighborhood,—fine folks. We grow hibiscus, amaryllis, caladium, mangos, bananas and some plain orchids." . . . Mr. and Mrs. **Ethan A. Collier** of Salem, Ore., celebrated their golden wedding anniversary April 4, at the First Presbyterian Church. . . . **O. W. Stewart**, at my request, gave a talk on blueberry growing at the Braintree Rotary Club on April 8. He is a real authority on the subject and his talk was well received.—**Oberlin S. Clark**, Secretary, 50 Leonard Road, North Weymouth, Mass. 02191.

'12

Word is received from Mrs. **Herbert Woehling**, of R.D. #4, Norristown, that her husband passed away on May 24, 1964. . . . A letter from Mrs. **William A. Canaday**, 146 DeLeon Road, DeBary, Fla., says that Bill passed away suddenly on April 15. When I visited the Canaday's several years ago it was a great pleasure to see them so comfortably settled and inspect the wonderful flower garden where Bill spent his time with such gratifying results. . . . A letter from **George A. Robinson** of 1224 So. Peninsula, 404 Daytona Beach, Fla., tells that after nearly 40 years of engineering work with the Navy Department at Washington, D.C., he retired 15 years ago to Daytona Beach. For a time they had an ocean front home but later moved to an apartment where they are very comfortably situated. . . . A good letter from **Johnnie Noyes** tells of a quick trip which he and Carolyn made to Los Angeles where they visited four of our classmates, **Bill Lynch, Page Golson, Herbert Calvin**, and **Henry**

A. Babcock. Bill Lynch has been retired from the Aluminum Company for some years. He travels extensively having made eight long visits to Europe. He is an ardent golfer and is enjoying life to the fullest. Page and Bert are neighbors in Laguna, about 60 miles south of Los Angeles. Page is now fully retired from the many companies with which he was associated. From his living room he looks over the broad Pacific and his yard is high tribute to his green thumb. . . . Bert Calvin is a little more than semi-retired as he is occasionally called back in a consulting capacity. . . . Henry Babcock is as busy as ever but did find time for a quick luncheon with Johnnie at the University Club. Henry is a prolific writer of technical articles on his specialty: appraisals. His book for graduate schools of business administration will be published next year, titled "Appraisal Principles And Procedures." It will cover architecture, engineering, economics and business and stress the income method of valuation of income producing real estate.—**Frederick J. Shepard, Jr.,** Secretary, 31 Chestnut Street, Boston 9, Mass.; **John Noyes,** Assistant Secretary, 3326 Shorecrest Drive, Dallas 36, Texas.

'13

When you read these notes the 52nd Reunion of the M.I.T. Class of 1913 will be history. We hope that you were present. A goodly number who could not attend have graciously replied to the committee's invitation to join us at Clauson's in North Falmouth. . . . **Arthur Carpenter** writes: "It does not now appear that I shall be at the reunion, in June. I hope you have a good attendance and a fine time. Best regards." . . . **George Dempsey** pens: "Every darn time we plan to go to the M.I.T. reunion, something bobs up to change the plans. This time, 1965, it's the fact of going to Europe in June. Sorry we can't make it. Even in retirement, we seem busy." Good luck, George. Make plans for 1968. . . . **Paul** and **Arlyle Cogan** will be (or were) among the missing. We were very much pleased to receive a long four-page letter from Paul. He stated that this past winter they have been very quiet following a four months' visit to Europe which included Denmark and a week's trip to Russia visiting Moscow and Leningrad at the rate of \$50.00 a day for each of them. They appeared to have enjoyed "inside the Iron Curtain" and had real down to earth contacts with "The Man on the Street." To sum up Paul's very descriptive letter: They enjoyed Russia; the cities were very clean, the people very friendly and many spoke, as well as understood English; the Cogan's now have a better understanding of the Russians but Paul hopes never to return there unless he is drafted. We wish that we could quote him verbatim but time and space are limited. We shall miss you Paul and Arlyle, but start making your plans for the 55th.

. . . **Al Brewer** states: "Sorry we can't make it for the 52nd Reunion. Hope for better luck in 1968 and the 55th."

Charles Albert Smith from Pasadena, Calif. answers: "Sorry as can be but I am unable to attend." . . . **Ken Blake** replies: "Phil, sorry—won't be able to make it." . . . **Bob Tullar** writes: "I'm sorry to say it but the Tullars will not be with you this time. Seems like we'll be tied up with children and grandchildren from San Diego and Tucson. But best wishes for a grand reunion and best regards to my friends. Here are some snaps I took in 1963." . . . **Fred Lane** attached a note to his reunion check. "Congratulations and thanks for planning the 1913 reunion in June." . . . We received an interesting letter from Mr. Noah Swayne, **Don Van Deusen's** executor, who stated that Don developed cancer last July and underwent a successful operation. Shortly after returning from the hospital his wife Delia was hospitalized and she died of cancer December 4, 1964. Don never really recovered, so after a short time in a nursing home he was hospitalized and died April 9, 1965. His funeral was held at St. Luke's Episcopal Church in Darien, Conn., and he was buried in Hudson, N.Y., where supposedly he was born. We who knew Don are very sorrowful and had expected to see him at our 52nd. . . . It is with a very heavy heart that we must report the passing of that charming wife, Rebekah whom we met for the first time in June, 1963. Our most sympathetic feelings are extended to our classmate, **Ralph Thomas**. Ralph writes: "The look ahead is dreary, but I have wonderful memories of many years of happiness with a grand wife. One of these happy memories is our 50th Reunion in 1963." Yes, Ralph we shall miss you and dear Rebekah. Thanks again for advising us that **Clarence Berry**, our old friend is still confined at home with arthritis but we do hope to see both of you two "Sons of Maryland" with us in 1968.

It is always a great pleasure for us to receive those affectionate letters from **Marguerite Kelly** even if the last one was rather sad but hopeful. It seems that soon after the Kellys celebrated their 50th anniversary that December, **Prescott** was hospitalized with pneumonia and later with hiccups. He returned home after nearly four weeks of illness, but in only five days he had a serious kidney and bladder condition which entailed further hospitalization and after two and a half months of medication and treatments followed by a successful operation he returned to his home for further recovery. He weighed a mere 135 pounds. Although **Prescott** has braved several months of various illnesses he is now headed for good health again following a bad throat condition. After all of these trying affairs for both **Prescott** and **Marguerite**, they will not be at our 52nd as expected. Here's hoping that 1968 will find these two dear friends back in good health and among those present at the 55th at Oyster Harbors. . . . **Sam Rogers** from Sarasota, Fla., replies: "Sorry, I cannot make it." . . . **Alex Pastene** reports: "I am sorry to have to say that other matters will not let me attend the planned reunion this spring. I

send my best wishes to those who do—and don't cross me off the list for the future. As far as I know now, the future extends ahead a good piece, but I am aware that in this modern world the surest thing one counts on is not performance but change. Good luck and happy holiday."

Warren Glancy states: "It now looks as though we will not make it for the 52nd as tentative plans call for a visit to Vermont plus another to Rochester, N.Y., at about the same time. Am enclosing check to help out the class treasury a little. I know the class thoroughly appreciates your efforts." . . . We are saddened as our old reliable and class historian **Lester Gustin** about two weeks ago suffered a shock and is now confined to the Winchester Hospital in Winchester, Mass. **Charlie Thompson** and your scribe visited him and found him mentally alert and now being treated for a quick recovery, assisted by walker. Needless to say Gus, Ethel and his two sons with wives will not join us at Clauson's. Get well Gus. We shall expect you to celebrate our 55th at Oyster Harbors. . . . **Pete Haynes** replies: "I am sorry that Mrs. Haynes and I cannot come to the reunion this year, but hope it will be a bang-up occasion for you all." We shall miss the Haynes family. . . . **Joe Cohen** pens: "Thanks for your postcard. You do keep busy at the secretaryship. Mrs. Cohen and I will not be at Clauson's on June 11. Have fun and keep well." Joe, start saving your money for 1968. . . . **Ben Thomas** also pens: "Thanks for your card asking if I can attend the reunion of 1913 this year. No, I'm sorry that I won't be able to make it. My wife is rather crippled with arthritis and finds it difficult to get around, and there are several things that I have to do. Hope you have a good time. I certainly enjoyed the 50th reunion." We shall be looking for the Ben Thomases in 1968. . . . **Stuart Eynon** states briefly: "We will see you in 1968." Start planning now.

As usual we must report the sad as well as the joyful news. . . . Miss **Helen Wood**, **Leonard A. Wood's** sister, informs us that she passed away January 5, 1965. We have sent Miss Wood our class sympathy card and have asked for more details. . . . **Dave Nason** forwards a note: "In regard to your invitation for North Falmouth on June 11: it might be done. I cannot tell for sure as I am nothing but a useful appendage to a dominating female. However I have nature with me as she is seriously considering making an appearance at a gingerbread party of her own alma mater. If **Jack Horner** is around tell him to show. Meanwhile, my best to you and yours and hope that I may be permitted to attend this survivor's reunion on June 11." . . . That fisherman, **Gardner Alden**, pens: "Thanks for the reminder. Sorry I will be in northern Maine that date. Best wishes." . . . **Warren Gentner** writes that unforeseen circumstances prevent him from being present at the 52nd as anticipated and is disappointed. He states that he will be with us in spirit. We shall miss you, Warren, but keep in mind the 55th in 1968. . . . **Lee Parsons** finds that Suf-

field Academy with the commencement and faculty meetings cannot function without him. He has promised that he and Polly will be with us in 1968. So Lee, practice your piano and if you cannot come send your charming wife and we'll turn the pages back a few years to your pleasant days in Washington, D.C. We'll be looking forward to your long coming biography. . . . One of our dependables, **Bob Bonney** states that he and Jeanne would love to be with us at this year's reunion but due to his poor eyesight it is impossible to make the trip this year. They send their regrets to the boys and girls. They are feeling pretty well but just can't get around much. Well, Bob, keep fit and we know that we shall all miss you but start preparations now for 1968. . . . This ends our present reporting year 1964-65 so we will sign off now. We shall resume our notes in the November, Technology Review, with your help.—**George Philip Capen**, Secretary and Treasurer, 60 Everett Street, Canton, Mass.

'14

Phillip E. Morrill died on May 21, 1965. His home in recent years has been Martin Road, Concord, Mass. He was a Course I student, and practically all of his professional life was with the Bemis Bag Company. He was chief engineer and later vice-president. During his earlier years Phil was located in St. Louis but for the past decades his office was in Boston. He married Helen White in 1916 and our records indicate one child, a daughter. Our sympathies go out to the family of this loyal '14er.

Word has been received of the death on February 27, 1965, of **Dale R. McEnary**, Course IV, at his home, 4800 du Pont Avenue South, Minneapolis, Minn., where he had lived for many years. He was a member of McEnary and Larsen, architects, Minneapolis. At a very early stage in his career he had also spent some time in Chicago. Our records show that he married Frances A. Reed in 1918 and that they had four children. The sympathies of our class go out to his family. . . . We are also sorry to report the death, on March 19, 1965, of **Ralph D. Bates**, Course XI, at 1336 Magnolia Avenue, Oakdale, Calif., where he retired a few years ago. Much of his professional life was spent in the East. For a short time after graduation he was a research assistant at M.I.T. Then in the course of time he worked in government offices in West Virginia and Greenville, N.C. Later he became connected with various New York State Health Departments in Buffalo and Albany; also for a short period in New York City. He moved to California about 1961. He married Lucille Anser in 1920 and there were two children. The class extends its sympathies to his family. . . . The trek to the South continues. In a letter to Dinny, **Ted Gazarian** reveals a new address: 2727 N. Atlantic Avenue, Apt. 900, Daytona Beach, Fla. 32018. "Thanks for your letter which was received some time ago and for your kind invitation to

visit you. Sorry my acknowledgement was delayed so long due to our moving around in the different parts of Florida to find suitable quarters to live in eight to 10 months of the year as we would like to try a warmer climate than Boston. As you will note from the above address we finally decided on Daytona Beach and have leased an apartment on the ninth (top) floor of an apartment house located on Highway A1A facing the ocean and commanding the view of Halifax River from the back patio: thus we have a guest room and Vi and I extend to you and Mrs. C. as well as your youngsters standing invitations to come and visit us in Florida. We expect to go North some time this summer but I don't believe it will be before July when we pass by West Hartford. We'll try to call you on the phone and if you happen to be at home will be glad to pay you a visit. In the meantime we both send you and Mrs. our most kind regards and best wishes. Sincerely Ted."

A recent note from **Hibbard Busby**, Brevard, N.C., gives some information about **Rudy Zecha**. "We were delighted to have a visit from Rudolph Zecha, April 3, while he and Mrs. Zecha were driving back from Mexico. I don't know of anyone I would have been more glad to see; Rudy and I went to school together all the way from ninth grade grammar school and I always thought highly of him. It was an opportunity, also, to meet his charming wife whom we enjoy very much. Unfortunately the weather was rainy and we could not get to see anything but it was still a wonderful opportunity to sit around the fire and recall old times and people we both had known. I hope we shall have other '14ers also; this is not much of a deviation from the path of South to North and is very rewarding country. . . . This week I start a counselor training class for people who have volunteered to take on any cases referred to them (even here we have those situations!). I hope you will find your way down here one of these days and that we may have the opportunity to show you how lucky we are. Sincerely, Bus." . . . We have just enjoyed a brief visit from **Oliver C. Hall** who has been touring New England following a stay in Jamaica. Ollie is an old crony of your secretary since we were lab partners together in 1914. He would like it to be known that since he lives in Charlottesville, Va., his home is also a potential stop for '14ers on the North-South motor route.

We have another philosopher and potential exhibitor in our next reunion painting show in our midst. O. C. Clisham, writes from 20 Abbott Street, Nashua, N.H.: "Dear Herman: In the latest Review I have been so intrigued with the notes about **Alden Waitt** that the indifference of 50 years toward alumni affairs has been broken down. **Homer Calver** nearly did it in the previous issue, but this really did it. My main objection to alumni meetings has been that they were boring. I do not consider myself to be an intellectual, but many if not most alumni converse mainly about sex, business, the shortcomings of our governmental system and personnel, the latter in the form of nasty jokes or anecdotes, detailed hole-by-

hole description of a recent golf game, etc. But if any phase of music, politics in a serious sense, books, the fine arts, is brought into the discussion it usually drops to the floor like the proverbial lead balloon. But now everything is changed! We have in our midst an artist, a landscape painter already who has a one-man show yet, and who is possessed of the soul of a poet, as all of us landscape painters like to think we are. He knows who Camus is—think of it! Anyhow, I want to write to him and would appreciate your sending me his San Antonio address. Don't know how he could prefer Texas to New England to paint in, but chacun à son gout. To make it easy for you to remember I shall enclose a card, if I don't forget. Forgetting is my specialty. I am really expert at it. The only fellows I knew at M.I.T. were in the same course (X) and near me in the alphabet. They are nearly all dead now, notably good old **James Jefferson Rucker Bristow** who taught me the sinful pleasure of the mint julep. So I don't believe my name will mean much to you, but here it is anyway, O. C. Clisham."

We do indeed remember you Clish and as I noted in my letter to you our reunions are rapidly improving in quality, for which the ladies who were present last June may have been partly responsible. Then again it may just have been age, or the fact that most of the class are now not so active in the pursuit of the coin of the realm, so when there is a reunion there is not the urge to blow off steam. We can concentrate on the finer things of life, or can we?—**Herman A. Affel**, Secretary, RFD 2, Oakland, Maine; **Ray P. Dinsmore**, President, 9 Overwood Road, Akron 13, Ohio.; **Charles H. Chatfield**, Assistant Secretary and Class Agent, 177 Steele Road, West Hartford, Conn.

'15

It's May 15 now, but when you read these notes our long looked for 50th Reunion will have come and gone. Complete detailed report will be in the November notes. Meantime I cannot resist telling you of the monumental and magnificent job **Ben Neal** did to raise over \$500,000 (divided about equally between cash gifts and will bequests) for our 50th Reunion gift to M.I.T.—the largest amount ever donated by any Class at any time—a splendid achievement all done by "soft sell" in Ben's friendly manner. This, in contrast to the hard pressure of similar campaigns. Nice going, Ben, cheers and thanks to you. . . . Late in April generous and cooperative **Mona Lacy** had her Ladies Committee for lunch and meeting in her pretty Newton house. The tremendous success of the ladies' program at the Reunion is a tribute to these gracious and hard working Class Ladies—many thanks to them. . . . Ben's letters to classmates have been so warm, friendly, genuine and touching—masterpieces of composition—a real "soft sell." He's done a terrific job, above and beyond what any of us ever expected or

could have hoped for. Unfortunately, Ben couldn't make the Boston Class dinner, but wrote: "I will miss the festivities, greatly, including the bourbon, and ask that you extend the warm hand of fellowship to all who are there with my best regards." About the same time, he received one of our largest will bequests and wrote: "Hey, this 1915 gang is terrific" and so you are! What makes 1915 The Class Supreme? One of the many reasons is the class dinner, April 23 at the M.I.T. Faculty Club. Twenty-nine Classmates, sons and guests relished a pleasant cocktail hour and delicious Bill Morrison dinner. The Pirate, sharp as ever, led off with a "We are Happy" cheer. Present were: Larry Bailey, Roland Baldrey, Wayne Bradley, Jack Dalton, Reggie Foster, Clive Lacy, Jim Hoey, '43, Seward Highley, Larry Landers, Azel Mack, Archie Morrison, Frank Murphy, Harry Murphy and his son Peter, Charlie Norton, Stan Osborn, Wally Pike, Pirate Rooney and his son Gerry, Chet Runels, Al Sampson, Jac Sindler, Bill Sheils, Bill Smith, Fred Waters, Easty Weaver, Pop Wood, Max Woythaler. The Lowell Twins **Reggie Foster** and **Chet Runels**, both only recently out of hospital from serious illnesses, made a special effort to be with us and we were delighted to see them both looking and feeling so well. Keep it up, you two. Sam Berke, Speed Swift, Bill Brackett and Louie Young were all missed by their absence. Seward Highley, Roland Baldrey and Peter Hooper were "long time no see" and welcome. Long distance was battled out by Charlie Norton, Vineyard Haven; Pop Wood, Peterboro, N.H.; Stan Osborn, Hartford; Wayne Bradley, Moosup, Conn. The main business was the discussion of the coming reunion and Jack spoke in high praise of Ben's fine work. **Bill Sheils** contributed a splendid check in memory of Henry. Many thanks, Bill. I want to add thanks and appreciation to the course representatives who were so dedicated and persistent in following up the men on their lists to come to the reunion. After the Faculty Club dinner a number of the fellows came over to our apartment for a pleasant and late visit with Fran and a little cointreau and cognac—very nice all around. . . . **Stan Osborn** wrote "A grand time at the Boston dinner." Follows some interesting news and letters: with his tardy dues check **Dick Bailey** (Philadelphia): "I am sorry to be so slow. I forget good things, but remember bad things."—like some of the stories he tells as our annual New York City Class dinner. . . . **Whit Brown** is a founder and trustee of Marlboro College in Marlboro, Vt. It is a small, independent, co-educational Liberal Arts college with 128 students and 26 Faculty. . . . **Evers** and **Mary Burtner** did a 9,000-mile motor trip to the west coast this spring. What stamina! . . . **Harvey Daniels**, Delray Beach: "My active business years were spent overseas—in the Orient, mostly. I retired in 1950 to work a couple years for the U.S. Government in Washington. From that time on my wife and I worked on developing some living plan that would keep us within reach of our sons and their families. It has worked out that we have

an apartment in Minnesota and another here in Delray Beach. It is a very satisfactory arrangement as it gives us opportunities for seeing and being with our grandchildren in the summer time and avoiding the cold weather of the winters. We are Floridians now—have our legal residence here—vote here too. We both 'play-at' golf in all seasons. The last time I attended a Class of 1915 function was our 15th held somewhere on the North Shore of Boston. The date then coincided with one of my vacation periods when we were home from Japan."

Ray Delano, Duxbury, Mass., writes: "I have been associated with the construction industry for 45-years, but of course am now retired. My wife and I live here in Duxbury, my native town. We have two sons and six grandchildren. Our younger son is a doctor of veterinary medicine, having received his education at Cornell University. Our older son was educated at Penn State and is in business here as a registered land surveyor, with whom I am associated. I might add in closing that time does not hang heavily on my hands in retirement." . . . **Dinger Doane**, Municipal Yacht Basin, Daytona Beach: "For the past five and a half years I have lived aboard our boat at the above address, after coming down via the Inland Waterway. I stopped at Pt. Pleasant, Beachhaven, Atlantic City, Stone Harbor, and Cape May en route. I went back the same way in 1962 delivering a Chris Craft to Beverly, Mass. I went up over the road this past Christmas and had a nice afternoon with Azel and George at the Faculty Club, as a result of which I will make every effort to be there June 11." . . . **Loring Hall**, Detroit: "My work for United-Carr and Elox tends to take me more and more into the foreign aspects of the business, and I like it. I was in Australia and New Zealand last year and now I am working on Argentina and South Africa. Both have their political problems, but are prosperous in spite of them. When I am home I keep busy with my woodworking shop and stamp collection in the winter. Then I have a club of 14 veterans at the V-A hospital in Dearborn, to whom I bring a suitcase full of stamps once a week. Right now, the golf course, on which we live, looks very inviting. As soon as it gets a little drier I hope to get started. Ruth and I both like to play. I had my first hole-in-one last year, after 53 years of trying."

Despite all his tough breaks and hospitalizations, **Ken Johnson's**, superb sense of humor keeps him going cheerfully: "With several years of experience on those narrow ambulance stretchers I think I could do fairly well as one of the victims of an accident on a TV show. I wouldn't have to go to any rehearsals, but I might have to join some actor's union—not worth it! I think I'd get more lasting satisfaction acting as one of the many human guinea pigs for new drugs. At the moment I think I stand just one step beyond the mice, monkeys, cats, dogs, pigeons, rats and what have you. To the various pharmaceutical companies I am available for guinea pig trials—except possibly potassium cyanide compounds, arsenic and similar compounds.

Maybe, I'll be able to take in our 75th Reunion." Now, there's a guy for you! . . . From a strange address in Japan, **Ernie Loveland** wrote: "I am teaching English to priests in a Buddhist Temple. They have taken me to watch a class in the Japanese tea ceremony—a highly stylized method of serving tea. If the Japanese Government would extend my visa, I'd visit the northern island of Hokaido, then Korea, Taiwan, the Philippines, South Pacific and India."—a modern Marco Polo.

Bob Mitchell, Clearwater, writes: "I've been very much occupied merging the Magnus Chemical Company, which I helped found and develop, with another good outfit in our field, Economics Labs, Inc., to form a larger and more potent factor in the field. This has now been satisfactorily accomplished and I am resting down here." . . . It's always pleasant either to see or hear from classmates visiting in Boston. **Frank Parsons** dropped in to see me for an interesting talk. . . . **Gil Peakes** phoned while he was here and wrote later that **Bud Walker** had received a Christmas card from Mrs. Goodwin, now 93, widow of Harry Goodwin who was head of Course XIV in our day. The fellows in that Course, George Easter, Gil Peakes, Easty Weaver, Gardiner Wilson and Bud, are all planning to be at the reunion and hope to work out some sort of greeting for Mrs. Goodwin. **Speed Swift** claims the dubious and unsought honor of being the oldest man in our class, so he will be a privileged character at the reunion. I can hardly wait to see how he will claim his honor. We wrote: "I will, of course, bring along my Class movies dating back at least 25 years and some of M.I.T.-Technique rush, crew on the Charles, etc." This will give us all a nostalgic touch. Here endeth the column for this year. To all Classmates and their families my best for a happy, healthy and pleasant summer. So, until November: Ave atque vale—**Azel W. Mack**, Secretary, 100 Memorial Drive, Cambridge, Mass. 02142.

'16

The 49th Reunion at Chatham Bars Inn on the Cape has come and gone and now all signs point to the big one, the 50th, next June. As this particular column is prepared, we still find that the only way to reach our own good president, **Ralph Fletcher**, on a weekend, is to call his home in Bedford, N.H., and just ask: "Where are they?" This time (May 8) the answer was "The Montreal Skeet Club (we think we heard right), St. Janvier, P.Q., Canada." And once we reached Ralph, the big news was that Sylvia had just taken a first in a ladies event with a score of 95! . . . If you have been wondering how sample members of the Class of 1916 look, you have only to refer to page 21 of the February, 1965, issue of The Technology Review, for there you will see, assembled on the campus last fall, members of the M.I.T. Corporation, including two of our best:

Van Bush and Steve Brophy. And these two names keep cropping up in place after place. We find for example in the January Newsweek a fine little condensation on what Van Bush has been and is doing. We quote just a bit: "Modern computers—the 'brains' behind automation—began here at M.I.T.; and the man who launched them, physicist Vannevar Bush, is still a big man around campus. Now M.I.T.'s honorary chairman, Bush at 74 lives in nearby Belmont with his wife Phoebe. (The title gives him no administrative duties at the school, but his influence is still great)." And again you probably read about "Dr. Bush's Free Piston Pump" in the January Review and the patent Van has received. A newspaper writes: "A long ignored type of internal combustion engine has been radically revamped by some new thinking from Professor Vannevar Bush of the Massachusetts Institute of Technology. The results could well revolutionize automotive and industrial power packages." This prompts us to ask: what next? And in 1964, here's an item we missed in our class column and shouldn't have: "Named one of the three 'Great Living Americans' by the U. S. Chamber of Commerce was Vannevar Bush, '16. The other two: Lucius D. Clay and John J. McCloy" (from M.I.T. Alumni Make News, 1964).

And as for Steve Brophy: a picture of Steve appeared in the December, 1964, issue of the "Outlook," the publication of the American Craftsmen's Council, of which Steve is a trustee. **Bill Barrett** is president of the A.C.C. and when we asked him about Steve he wrote: "We have thought it would be well for our members to have first-hand information about our trustees and the broad representation of important people who are serving them. Therefore, in our new publication we are running profiles of our trustees. Not only is Steve a regular attendee at our trustees' meetings, but I am fortunate to be able to consult him on many questions on which he has been most helpful." Steve's profile will be posted on the bulletin board at the reunion. We knew he was chairman of Kenyon & Eckhardt 1931-39 and 1947-57 and president of the American Heritage Foundation 1947-55 and 1963 to date but here are some things we didn't know before: "Mr. Brophy was made an honorary commander of the Order of the British Empire in 1947 and has been the recipient of the Gold Americanism award of the Wall Street Post of the American Legion, the Civic Service award of the National Conference of Christians and Jews, a Distinguished Service Medal from the School of Journalism of Syracuse University and from the Advertising Federation of America, and holds an honorary degree of LL.D. from Gonzaga University (1953)." Again, we had word from the Alumni Association early in May: "Mr. Brophy will represent the Institute at the inauguration of Samuel B. Gould as president of the State University of New York on May 13, 1965."

On Sunday, April 25, we were surprised to hear a familiar voice on New Jersey's radio station WVNJ, and as the voice

continued and talked about taxes we soon recognized our own **Leonard Best**. He has been active in state affairs, especially on items affecting education and taxes, and is now chairman of the Citizens Action Committee for a Sales Tax in New Jersey. And Len tells it straight when he says: "The tax system is New Jersey has grown like Topsy. New Jersey property taxes are the highest in the nation." Some of us are more than sure our taxes are highest in the state—ask us what per cent we pay on each \$10,000 of actual present value! Again says Len: "I agree with the majority of the people of New Jersey, who time after time have indicated in professional polls that if a broad base tax is necessary they prefer a sales tax." And what Len goes after, Len usually gets! . . . **Rudi Gruber** sailed on the Greek Line M.V. Olympia on April 27, for his usual trip abroad. He reported: "Voyage is pleasant—ship packed, but a nice crowd." . . . **Jim Evans**, in between medium-level regular math classes in the Paterson, N.J., high school, supplies us with bits and chunks of news about '16ers. **Cy Guething** indicated to Jim that **Gene Lucas** was not going to be able to make the 49th this June but expects to be on hand at the 50th. Cy says too that the **Spencer Hopkins** had dinner with them in April but did not expect to be able to make the 49th, and that out-of-doors is where he (Cy) will be from now on in all good weather. . . . A postcard to "Uncle Jim Evans" from **John Fairfield** expressed regret at not being able to see Jim and Jess in New Jersey during their spring visit to a daughter in Pearl River, N.Y., just over the New Jersey-New York border line. . . . And Jim reports an April note from **Peb Stone** that said: "Sorry to hear that your pedagogical activities are interfering with the 1916 luncheons in New York." Jim has, in fact, taken on a pretty full-time job teaching math from April through June; "ever hear about 'sets'?" asks Jim of all loyal Course II men.

The **Harold Milles** started early in April for a three-or-more months trip to California with campings on the way in the Southwest. We gave Harold an envelope to be opened 17 miles after crossing the third state line west of the Mississippi, and asked him to draw on a return stamped plain postal card, a picture of just what he saw looking north. Along came the card all right, with a rural backyard picture all right, small house and all, and with the caption "St. Jon, New Mexico." And the post office mark was "St. Jon, New Mexico" too, but we can't find it on our map. Anyway, we have had word that they have reached their daughter's home in California, had camped five nights in Oak Creek Canyon, Ariz., four nights in Tucson, and had had to go around the northern end of the Sierras for the passes were not open. . . . We have word from two of our worthy coeds, **Elizabeth Pattee** and **Elsa (Habicht) Mueser**. Elizabeth writes that she has now completed her retirement move and left Warwick, R.I., for her new retirement home in Meadow Lakes Village, Highstown, N.J., and **Elsa** writes from Mountain Lakes, N.J.: "To the class-

mates with the grandiose jobs and compelling interests. Our son tells me that ninety-nine per cent of the work he does is new and not heard of in his college years, but like myself, we acquired the ability to learn new things, to open our eyes, and to worry and enjoy the lives we have to live. Each year we take a lengthy trip in winter, walk miles in the old places of this our 'limited' little planet. We have been to all the continents and all but one country of Europe (Finland), most of the countries of South America and the states of our Union. We have taken part in many civic enterprises—scouts, garden clubs, League of Women Voters, roadside councils, and have never learnt to keep our mouths shut about world affairs. Certainly I do not like to write about myself but hope to see all the old folks at our 50th Reunion."

We had cards and notes from **Don** and **Nell Webster** from Mallorca, Spain until late April, when they left their "happy island" and headed home via Sardinia, Naples, Genoa, Cannes, Algeiras, and Madeira to East Falmouth on the Cape. In their last letter, Don says: "Had a pleasant reunion today with Dexter Tutein, '17, after 40 years—he lives here." And then: "The problem now is, shall I try to learn to fight a bull (see enclosed handbill)." And we read what Don is referring to: "These exercises will be directed by the manager of the bull-fighting, at Cortijo Vista Verde, Anton Martin, who will teach everyone at the festival how to fight with the bravest bulls scrupulously chosen from the best Spanish bull farms, but one year old bulls." And: "Come and try fighting also yourself one year old bull." It hardly seems to us that this is why Don goes to Mallorca, but then, the world is full of surprises! . . . In the February, 1965, issue of the Percolator, published by The Chemists' Club (where we have the '16 luncheons), the club historian John Mellecker has an article on "Chemical Crossroads of the World," in which he says he has recorded "extensive conversations with eight men who possess an astonishing amount of information and insight into the factors which set the stage for the era of great growth, and who had significant roles during this period." One of the eight men is our own **Rudi Gruber**, who is listed as: "Rudolph Gruber, who besides being a manufacturing chemist of distinction, has conducted a lifelong liaison among the highest circles of eminent chemists throughout the Western World."

In mid-April here are the doings that **Willard Brown** was looking forward to: "Leaving tomorrow for a short jaunt to North Carolina via Hazleton and Philadelphia, Pa., and across the 17-mile bridge and tunnel at Hampton Roads. We want to spend a few days at the ancient Mount Pisgah Inn, up at some 5,000 feet. By sheer chance the new Southern extension of the Blue Ridge Parkway which runs some 125 miles or so from near Asheville to Cherokee, N.C., passes close to the Inn. The Inn is so old that it has a latch-string instead of a knob at the main door, but has always had quite a distinguished clientele of folks who want to get away from it all. And it won't be long for

this world once the gum-chewing hordes who infest the Parkway in summer start passing its doors. Then later in May, up to the bush of Quebec for the native red-meat speckled trout, which are the only fish in the 40 or so lakes of a club of Canadiennes to which an old friend of mine belongs. Incredibly fine fly fishing and a truly dedicated bunch of fly fishermen up for the spring fishing. Then, of course, to Chatham Bars!"

Earl Mellen has followed his own method of keeping busy since he retired as president of Weston Electrical Instruments in Newark six years ago, serving on the boards of a number of companies. Apparently the most time-consuming this past year have been these: president, Newark Rotary Club; chairman, Hospital Service Plan of New Jersey; chairman, Millburn-Short-Hills Planning Board. He notes: "Family status the same with 16 grandchildren. A year ago I broke my arm skating—nerve was damaged in operation so my golf was almost nil for 1964. This year my wife has a broken ankle so we have been staying close to home." . . . Last November **Vertrees Young** was what-he-called "railroaded" into the presidency of the Council for a Better Louisiana (CABL), and we understand he is really up to his neck in the thing. During the last year and a half his principal job was "chairman of the steering committee that finally got the Gulf South Research Institute launched." The purpose of this Research Institute is "R & D for Louisiana," to develop "a science center in Louisiana to serve both the needs of the public through research for the government and of private industry. . . . Working together, the Louisiana State Science Foundation and the Research Institute can focus the talents of Louisiana's capable scientists, economists, and technologists and can attract others to the state to ensure the means for its advancement." And Vert says: "I swear to goodness this is my last public chore! I haven't had any more leisure than a paper hanger with the hives. I know what you mean when you spoke of getting down to the seashore for six weeks, away from study books, TV, and students. I think Sylvia and I will head for the high country out West when the hot weather descends upon us, possibly the Black Hills or some place in Montana." We regret to report that Sylvia, our beloved safari author, is still having serious trouble with her eyes. . . . **Henry Shepard** was proud again to see a picture of his famous astronaut nephew, Allan, in the papers, this time in the National Observer throwing out a ball to start off the baseball season in Houston, Texas.

Irv and **Kay McDaniel** returned to their native California late in April from their long trek of exploration and discovery throughout Mexico. During a national quality conference at Los Angeles, we (your sec.) were fortunate in being their invited guest for an afternoon (May 5) in Disneyland, and joined in their "ahs" and "ohs" on the submarine voyage, on the Matterhorn bobsled run, on the jungle river boat safari, and on the monorail ride. We now have from Irv "some random thoughts about Mexico and some

travel hints." He writes: "If you are going to compare Mexico with Europe or the Orient, don't go! If you are going to be critical, stay home! If you want to have a friendly visit with your next door neighbor, I am sure you will have a wonderful time—we did!" Irv then proposes "A Month's de-luxe Fun Vacation: January—March. Let me suggest that you contact Barbachano's Travel Service, P.O. Box 90, Merida, Yucatan, Mexico; and tell them you would like to spend a week at their deluxe, exotic hotel on the tropical isle of Cozumel. Then let them arrange three or four days at Chicken Itza, one day at Merida, three or four days at Uxmal. They own and operate all four deluxe hotels and they will arrange your transportation, guides, etc., including flying from Mexico City. Allow at least seven to 10 days in Mexico City and see Taxco, Cuernavaca, Puebla, etc., and you will have seen the best of Mexico." As for auto travel, Irv writes: "All our roads were paved and well maintained. Always get 90 octane gas (green and white pumps)—we preferred Pemex. For oil, get 'Especial,' but it is best to carry your own. In the South and West, gas pumps are far apart so get gas whenever you can. For insurance get only 'La Provincial'—the best and it costs no more—also get the maximum insurance. The best route information and general guide is the AAA Book—Mexico and Central America. Their AAA map is also the best." As for food: "From my letters, you know what wonderful food we had. I don't like Mexican dishes—they are usually too hot. There are three grades of pepper (chile): very hot, too hot, and impossible! And they like pepper on their potato chips and peanuts—not salt. Even Planter's Peanuts say salted, but they are salted with pepper." And finally, Irv gives something on costs, while they were in Monterrey: "Costs are very low here. Our bungalow and marvelous meals at Fortin cost \$7.00/day/person. Kay's shampoo, set, and tip were \$1.50. My haircut by an artist was 40 cents. Taxis outside the larger cities are about \$1.60 an hour. My night in the hospital under the oxygen tent, with doctor, nurse, attendant, tests, etc., just \$15.00. Bring your own Woolite, Ivory Liquid, etc."

Stew Rowlett continues to make Clearwater sound good. Says the **Duke Wellingtons** were nearby for several weeks and they had several sessions of good bridge—"our speed", says Stew. And he tells of finally contacting the **Val Goodings**—says the Gooding's street is only a block from theirs, but after about a half mile, it has a three-mile gap and Val is at the other end of the three miles. Stew contends it's a country village growing up—with a number of two- and three-mile gaps of country side. He draws water from the near-at-hand lake and as of April 30 he had "four gardenias 'busting' out all over, 18 rose bushes loaded with blooms, and all my other 100 bushes, trees, etc., doing well. And, oh yes, so are the weeds." . . . Here's something from **Bob** and **Hazel Crosby** that makes some of us say: "Hear, hear!" We quote: "We belong, I'm afraid, to that minority group of non-travelers who, though it may

sound very dull, do derive pleasure and contentment from spending most of our time in that strange place called home! Our days are very busy taking part in town activities and in the pursuance of our various and separate hobbies and when evening comes we relax and hope that the telephone doesn't ring and if it does that our excuses sound legitimate." Bob says they were awaiting a summons to parental duty in Bar Harbor after the arrival of another grandchild. . . . Word from **Brad Curtis** in Interlaken, N.J., notes that he has been enjoying retirement for good since he gave up his teaching job in E.E. at Newark College of Engineering in 1963. He reports a spring vacation trip and visit to High Point, N.C., and a stop-off at Williamsburg, Va., on the way. He also has a forthcoming wedding of a North Carolina granddaughter who finishes Beaver College in June. With one daughter located in North Carolina and with their second daughter's family moving from the Bell Labs location in Holmdel, N.J., to Naperville, Ill., Brad says the old folks will miss the children.

Charlie Glann, in Oswego, N.Y., says they have only a year and a half to go before Mrs. Glann retires from teaching in the high school. And he speaks of grandchildren thus: "We took a short trip to Albany, Troy, etc., to see the children and grandchildren (15 in number) on Palm Sunday. The grandchildren seem to come taller than our generation. One, 14 years old is now 5 feet 11 inches tall, the tallest boy in his school, while his sister, 12 years old is 5 feet 9 inches tall—both still going up. So, I'll add something from the old goat: 'Education is what man gets when he talks with a group of teenagers.'" . . . **Pete Mahlman** writes from Youngstown, N.Y., where he has kept "bachelor's" quarters since his wife died in 1954. He is fortunate in having his daughter and six wonderful grandchildren, ranging from 20 to two, in Lewiston, only five miles away. Among them are twin boys age 20 at the University of Michigan, and another boy at the Citadel in South Carolina. So Pete keeps young with his grandchildren of all ages and looks forward as we all do to the 50th next June. . . . In mid-March, **Allen Pettie** sounded thoroughly wrapped in the beauties of early spring in Tryon, N.C.: "Now, with daffodils shaking their heads all around us, forsythia and spirea coming into full bloom, peach and flowering crab buds showing pink, blue birds furnishing our nesting box (a tufted titmouse is trying to peck her way into our wren house; Sec.), and the Tryon steeplechase with a million dollar field of horses being run off today, spring is crouching for a swift pounce, and I am pushed to clean up the massive pruning and spraying which has to be done in the dormant season." And on rainy days: "I am assembling a flat all-aluminum four-foot by 12-foot lower sun shade for a couple of our over-sunny windows. Since its support against a frame house requires some structural design, I have nostalgically made use of what you should recognize as old friends: Fuller and Johnson's 'Applied Mechanics,' Spofford's 'Theory of

Structures,' U.S. Dept of Agriculture's 'Wood Handbook,' and Knowlton's 'Standard Handbook for Electrical Engineers' (the last for characteristics of extruded aluminum shapes, partly alloy 3003H14 and partly 6063T6). The whole thing weighs only 100 pounds but, while we rarely have a significant snow fall in our little Thermal Belt, it is designed for a 25 lbs./square feet snow load, and with some consideration of the playsome Hazel, Edna, or Diane. It's my experience that one never learns anything that does not some time come in handy. Check?" Right? Right!

We regret to report the death of **Harold Whiting** on March 26. An item in the April 2, issue of The Standard says: "Harold W. Whiting, employee of the New England Insurance Rating Association, died March 26. Mr. Whiting joined the rating association in 1926 and in recent years had served as an inspector in the improved risks department. He had retired after more than 39 years service on March 12, shortly before his death. A graduate of M.I.T., he was widely regarded as an expert on automatic sprinkler protection. A daughter survives him." . . . This closes the column for the current season. Many thanks to the many who have responded so generously to requests for news or philosophy—over 40 replies in the last two months!—for this is what helps to make the column full and interesting. And finally, the best wishes of your class officers for a good summer and just the kind of vacation you have been looking forward to.—**Harold F. Dodge**, Secretary, 96 Briarcliff Road, Mountain Lakes, N.J.; **Ralph A. Fletcher**, President, Box 71, West Chelmsford, Mass.; **Joseph W. Barker**, Vice-president, 45 Beechmont Drive, New Rochelle, N.Y.; **Hovey T. Freeman**, 45 Hazard Avenue, Providence, R.I.; **T. D'Arcy Brophy**, 50-year Reunion Chairman, 470 Park Avenue, New York, N.Y.

'17

These are the last set of class notes that you will receive until the November issue of The Review. We hope that the holiday season will generate news items by September when we will begin to prepare copy for the November issue. In the meantime have a good summer. . . . **Bob Erb**, one of our newest retirees, writes: "I retired from active employment in May, 1964. I now have no set business schedule but continue in an advisory capacity as well as on the Melville Shoe Corporation board with various committee assignments. Pat and I escaped the New England cold weather this year by spending most of January, February and March between the Caribbean, Florida and Arizona. We'll be at home in New Canaan (Conn.) until late June and then will go to our summer cottage on Governor's Island, Lake Winnepesaukee, N.H. You ask 'What would you do differently if you had to do the job over again.' That's a tough one to answer, but my quick answer is—nothing very different: it's been a good 48 years on the

whole." . . . **Alexander H. Kenigsberg**, Structural and Civil Engineer from Nashville, Tenn., brings us up to date as follows: "Shortly after graduation, I drifted to Chicago where I finally wound up as structural engineer with the consulting firm of Sargent & Lundy—and a few private jobs in between. The following 20 years were spent with the U.S. Corps of Engineers, mostly in their Nashville district, as design engineer on flood control and hydro projects involving planning, original designs and challenging problems. A few basic patents and unpatented inventions, technical papers, the latest in A.S.C.E. Transactions of 1958. I was married in 1920 and have a son and daughter—three and two grandchildren. My son is not interested in M.I.T. My daughter majored in math at Chicago University. Upon retirement near the close of 1956, I blundered into pathologic phenomena; cancer among them. Results: (1) In 1961 my first book *Origin And Nature of Cancer*, introducing *The General Biologic Theory of Cancer*. For sundry reasons the novel approach has not set well with the medicos. (2) I am now peddling to publishers my second work, *Cancer Can Be Tamed*. Although the underlying principles are the same, as they must be—the new treatment via carcinomas only, over 90% of all cancers—is thought to be a more palatable and comprehensible presentation of the theory's basic precepts. (3) Other works on bio-pathological problems are under preparation or contemplation. No, I am no doctor yet, nor do I intend to be. However, to M.I.T.'ers especially, I can pass a word of sound, bio-scientific advice as a guard against lung involvements, and the more frequently associated cardio-vascular disorders due to smoking: Don't Smoke; Don't Inhale; Use Filters, in the order of beneficent values. Between searches in fantastic semantics, summer gardening, periodic visits to see the grandchildren in Philadelphia and San Francisco, a few trips abroad, and brief excursions here, there has been little time for serious undertakings. Nonetheless, please put me down as committed to be with 'you-all' on our 50th in 1967."

The Class was well represented at the 17th Annual M.I.T. Fiesta in Mexico City on March 11-13, 1965. **Conchita Lobdell**, Vice-president of the M.I.T. Club of Mexico City, was a wonderful hostess. Conchita is well, has a fine job and a lovely apartment. She sent personal greetings to all of her classmates. . . . **Ruth** and **Bill Dennen** attended their 11th Fiesta and **Al Lunn** his third. . . . **Claire** and **Tom Meloy** swelled the Class of 1917 ranks and added zest to the party. . . . **Dick Lyons** and his wife were scheduled to come but couldn't make it. . . . The program was most interesting and one of the best in history. It included a trip through the **Anthropology Museum**, a lecture by Dr. Townes on lasers, a visit to the pyramids and a very outstanding "Noche Mexicana." The participants recommend the fiesta to all '17ers as a fascinating experience.

W. B. (Pete) Newell writes from Tampa, Fla.: "I am leaving for Boston in a few days and sailing on April 29 from

New York to join my wife, daughter and family in Florence, Italy, for a couple of month's tour of Europe. Several years have elapsed since the 1918-19 trip. We expect to be in Maine for the summer in time to celebrate the 4th of July." . . . **Robert S. Mulliken**, a member of the University of Chicago faculty for the past 36 years, is serving as distinguished research professor of chemical physics at Florida State University's Institute of Molecular Biophysics. Formerly, he was co-director of the Laboratory of Molecular Structure and Spectra and Ernest De Witt Burton distinguished service professor in the department of physics and chemistry at Chicago. Dr. Mulliken's research interests are the separation of isotopes, molecular spectra, diatomic molecules, the theory of molecular spectra, and electronic structure of molecules.

Notice has been received of the death of **Eliot W. Gifford** of Delray Shores, Fla., formerly of South Sudbury, Mass. He attended Course I for a short time but did not graduate. No information is available concerning his career. . . . The 1917 monthly luncheon at the Chemist's Club on the Thursday of the first full week of each month continues to be a pleasant occasion for those living in the New York area and those who happen to be in New York from out of town. The April luncheon was honored by the presence of Class President, **John (Al) Lunn**. Others present were: **Ken Richmond**, **Dick Loengard**, **Joe Littlefield**, **Enos Curtin**, **Bert Morton**, **Bill Hunter**, **Bill Neuberg** and the M.C., **Dix Proctor**. The May luncheon, which your secretary had the pleasure of attending, brought out the following: **Bob Erb**, who appeared with a beautiful coat of tan picked up during his winter in the southern climates as described earlier in these notes (**Bob** is really enjoying his retirement); **Bill Hunter**, just returned from visiting his daughter in Windsor, Conn., and incidentally contributing some time to the baby-sitting job; **Dick Loengard**, just about ready to take off on May 19 for a tour of Europe by rented auto; **Bill Neuberg**, busily engaged in selling chemicals; **Admiral Sullivan**, just back from a winter in Las Vegas, N. M., and facing a summer of sorting out memoirs and experiences for publication of a book; **Ed Aldrin**, looking spic and span, long time aviation expert, whose son, a doctor of science from M.I.T., is in training for future space flights; and **Bert Morton**, who is enjoying life from his A.T.&T. investments, and is planning a vacation of fishing in Maine.

On May 5, the M.I.T. Club of Northern New Jersey celebrated its 30th anniversary. Dr. Killian was the speaker. Those present from 1917 were **Dix Proctor** and wife, the **McNeills**, and **Ray Brooks**. The ex-presidents of the club were asked to take a bow. Included in this group were your secretary, who served from 1936 to 1937, following **Frank Maguire**, now deceased, who was the first president, and **Ray Brooks** who served from 1945 to 1946. **Ray**, who has been in and out of the Summit, N.J., hospital with a recurrence of back trouble, made a special effort to attend. . . . While you

are vacationing this summer just remember: "You can always feel much younger than you are—till you try to prove it."—**W. I. McNeill**, Secretary, 107 Wood Pond Road, West Hartford, Conn. 06107; **C. D. Proctor**, Assistant Secretary, P.O. Box 336, Lincoln Park, N.J. 07035.

'18

"You don't know beans till you've been to Boston," is a familiar quotation. It is the contention of this column that the Boston-educated bean is a knowing one and should be respected as such. Take **Ed Rossman's** educated bean for example. He wrote me from Tombstone ("the town too tough to die"), Arizona, that he would be at the interim reunion. Somehow an education in mechanical engineering qualified him as an assessor in the town of Paris, Maine, where he restored an old house and makes his home. Just to indicate the breadth to which that bean has been developed, he is a pretty good lapidary. He does a lot with a flower and vegetable garden. The former goes all out in the spring when 400 tulips are in bloom. The latter produces enough tomatoes to garnish the neighbors' tables, and has a savory section where garlic and sage are grown. On a clear day he can see Mt. Washington, 38 miles to the west. To the southeast, it is about an equal distance to the ocean. . . . **Max Seltzer** not only had his bean educated in Boston, but lives in Brookline only a block from the Boston line. Speaking of his business as a heating contractor, he says, "We do everything except make money." He still sings in the Temple Israel Glee Club. He serves as president of the Boston Technion Chapter (Technion being the M.I.T. of Israel). Its principal function is to raise money. Last June he went to Israel for the dedication of a new building. Realizing that engineering without art produces only a technician and not a creator, Max rounds all this out by being art chairman for the Temple Brotherhood. . . . The educated bean of **Ned Longly** is also a diversified product. For 40 years he served the Lockjoint Pipe Company of East Orange, N.J. When he retired he moved to a half acre of dogwood and sorrell trees on a hill three miles out of Asheville, N.C. Being part of a family containing eight boys and one girl, he has plenty of reason to visit relatives around the country, in addition to his two daughters and eight grandchildren. He has been to Europe and to South America, but says he cannot be with us June 11 to 13 at the Wianno Club in Osterville on the Cape.

The Boston-educated beans of two more of our number have done their last creative thinking. Belatedly comes news that **Federico Sanchez** (Course II) of New York City died in 1962. . . . **Hans Roesler** (Course X) of Los Angeles left us on January 30, 1965. Our numbers grow less and less, but the 1918 pot is still more than half full. The ratio is something like 380 to 230.—**F. Alexander Magoun**, Secretary, Jaffrey, N.H.

'20

If you were so unfortunate as to miss the 45th, you'll have to wait until next fall to read about it in *The Review*. At this writing, still several weeks before the reunion, large attendance guarantees a successful event. . . . **Foster P. Doane** retired from Bergstrom Paper Company, where he served with distinction as vice-president in charge of production for many years. Foster promptly became associated with Huyck Corporation of Rensselaer, N.Y., as consultant. However, he will continue to make his home in Neekah, Wis. Foster started his business career in Boston with his father's textile firm, then got into the paper industry as a research engineer with International Paper Company at Glens Falls, N.Y. Later he became plant manager of Sandy Hill Corporation before joining Bergstrom. Widely known throughout the paper industry, he has been a member of the executive committee of the Technical Association of the Pulp and Paper Industry, chairman of its pulp bleaching committee and is now a member of its project appropriations committee. . . . **Dick Gee** says he and Billie actually swam right into **Bob and Ruth Bradley** at Key Largo, Fla., at a huge salt water pool there. Dick also ran into **Frank Badger** down that way and learned that Frank has been conducting a one-man war against the Portuguese man-o-war invasion of the South Florida beaches. Frank, as many of you know, is proprietor of the Ocean Mist apartments in Hollywood Beach. He has enlisted the aid of M.I.T. and the Federal government in combating this menace to tourist well-being. Classmates who have been seen in his area during the season include **Karl Bean**, **Morris Lipp** and **Foster Doane**, as well as **Dick Gee**.

Lancy Snow is now in Schenectady, address: 2324 Williams Street. . . . **Nick Smoley** is living at 1226 W. Branning Avenue, Ft. Wayne, Ind. . . . Does anybody know the whereabouts of **Hank Caldwell** who retired from Swenson Evaporator Company not long ago? . . . Partly as a result of reunion correspondence your secretary has the sad duty of reporting the deaths of several classmates. . . . **Arthur Dopmeyer** passed away on March 25. He lived in Melbourne, Fla., and he and Mildred had been hoping to get to the reunion. We shall miss him and the sympathy of the Class is extended to Mildred. . . . **Clyde Norton's** reunion letter was returned, marked deceased. He had been with Remington-Rand in South Norwalk, Conn. . . . **Commander Jonathan E. Henry** died almost a year ago in San Diego. . . . **Colonel Lincoln Chambers** died on March 28. He leaves his wife and they made their home in Sacramento. . . . **Cac Clark**, '21 secretary, was kind enough to send me the Newark Evening News report of the death of **David P. Brown** of East Orange, who had had a distinguished career as a naval architect and chairman of the board of managers of the American Bureau of Shipping. He had been with the bureau

ever since 1920 and was awarded the David W. Taylor medal by the Society of Naval Architects and Marine Engineers. —**Harold Bugbee**, Secretary, 21 Everell Road, Winchester, Mass. 01890.

'21

Another in the long series of enjoyable Alumni Days on campus in Cambridge during June has seen a happy gathering of members of the Class of '21, their wives and guests. Reports of the events of this gala day and news of those in attendance will be published in these columns when *The Review* resumes publication with the November issue. Since this coming volume of *The Review* for the 1965-66 season coincides with our 45th anniversary year, we sincerely hope you will continue to be listed as a subscriber via your contribution to the Amity Fund. Only in this manner can you be certain to be one of the large group around the friendly '21 fireside as news is disclosed of the various events leading up to our 45th Reunion at the Griswold Hotel and Country Club on Eastern Point in Groton, Conn., for several days prior to the next Alumni Day on Monday, June 13, 1966. . . . **Ernest Henderson** and **Robert L. Moore**, top executives of the Sheraton Corporation, had a principal part in the three days of hoopla following the opening, on Patriots' Day, of the 31-acre Prudential Center in Boston's Back Bay area across the Charles and directly opposite the Institute. Dominating the skyline is a 750-foot high office tower of 52 stories. As a symbol of the new Boston, **Ernie** and **Bob** cut the traditional ribbon to open their 1012-room Sheraton-Boston Hotel, which towers 29 stories on the same site. As number 100 in the Sheraton chain (a recent purchase had to be designated as "99-A" to make it come out that way!), the "flagship of the fleet," as **Ernie** called it, marked the 50th anniversary of the Henderson-Moore partnership. The new hotel also features motel services, luxury suites, a 40-room penthouse, swimming pool and health club and accommodations for as many as 2,500 people at a single function. Incidentally, the scissors used for Sheraton openings are studded with gems from all countries where the chain has built hotels—the latest being a fragment of rare sandwich glass, shaped into a touchstone. The new center has, in various stages of completion or planning, a 5,800-seat municipal auditorium, a 3,000-car underground garage, four low-rise commercial buildings, twin 26-story apartment buildings and several additional housing and commercial structures. In another syndicated, but unrelated, feature story, **Ernie** is quoted as having advised his eldest son, now president of Sheraton, to live by the precept that "anybody wanting to get ahead in the business world has to do twice as much work at half the salary he's normally entitled to." And **Ernie** is reported as com-

menting: "I'm not quite sure this doesn't apply to all fellows who want to reach the top."

Robert R. Thurston has given a corrected address for his retirement home as Star Route, Jensen Beach, Fla. 33457. . . . **Arthur N. Brambach**, Seattle sales executive for International Business Machines, must have retired, in view of his reported change of home address from Bellevue, Wash., to Hunters Gate Farm, Route No. 2, Box 1870, Port Angeles, Wash. 98362. Right, Art? . . . **Arthur R. Harvey**, Director and Chief Engineer of Gardner Board and Carton Company, makes his home at 101 Kensington Road, Middletown, Ohio 45642. . . . Our class photo-historian, **Robert F. Miller**, has moved to another home a few blocks down the street from his old one and now receives mail at 6931 Chestnut Avenue, Falls Church, Va. 22042. . . . **George F. B. Owens** says he and Muriel have made their usual trek from wintering at Vero Beach, Fla., and will be sailing out of their home port of Islip, N.Y. 11751, where mail should be addressed to P.O. Box 93. How about sailing down to Brielle some day, George? . . . **Edwin T. Steffian**, Assistant Class Secretary, reports a change in his home address to 46 Lakeview Avenue, Cambridge, Mass. 02138. . . . **Ernest S. Curtis** has left Gloucester, Mass., for a retirement home at 2748 South Olive Avenue, West Palm Beach, Fla. 33405. . . . **Ralph R. Lewis** says he has moved from Revere, Mass., and now lives at 3 Whitney Street, Saugus, Mass. 01906.

Speaking of retirement, **Frank H. Coldwell**, Manager of Engineering and Power for Nekoosa-Edwards Paper Company, retired early this year after 40 years of service and plans to do considerable traveling. Following our graduation, Frank was associated with Bucyrus-Erie Corporation in South Milwaukee, Wis., before joining Nekoosa-Edwards in 1925. He has had various managerial positions, including that of power plant foreman, assistant manager of power, manager of mill power, manager of combined engineering and power departments and as staff engineering assistant to the manufacturing vice president. He is the author of a number of technical articles relating to paper mill power and stream improvement. A registered professional engineer, he has long been active in paper industry affairs. He served on a number of committees for the Technical Association of the Pulp and Paper Industry and was a member of the editorial board of the T.A.P.H.I. Magazine. He is also a member of the engineering committee of the Wisconsin Valley Improvement Company. In community affairs, Frank has been a member of the Port Edwards school board, assistant chief of the village fire department and a member of the executive board of the Samoset Council, Boy Scouts of America.

Retiree **Joseph Wenick** was cited by S.C.O.R.E. (the Service Corps of Retired Executives, sponsored by the Small Business Administration) for his work and presented with a certificate of appreciation. . . . Maxine and your secretary helped welcome our beloved chairman of

the M.I.T. Corporation, **Jim Killian '26**, to Newark, N.J., for the observance of the 30th anniversary of the establishment of the M.I.T. Club of Northern New Jersey. Your secretary served on the original steering committee (sometimes referred to as the steorage committee) which organized the club in 1935, and was a former president. Other past presidents recognized at the dinner were **George A. Chutter** and **Sumner Hayward**. Including the late **Maxwell K. Burckett**, the Class of '21 has had the honor of being represented in the club's presidency more often than any other class. Long-time treasurer of the club, **Joe Wenick**, officially retired this year but, if we know Joe, he won't be far away when help is needed. . . . Absent from Alumni Day this year for the first time in man's recorded history and sincerely missed were **Helen** and **Raymond A. St. Laurent**, our class president. Late in April, they took the opportunity for an extended trip to the Mediterranean, driving from Cannes through Carcassonne, Marseille, Monaco and along the shore of Lake Como. They continued to Lucerne and Geneva, then into the chateau country of France and to Brittany, returning in June. They are spending the next several months at their summer home at Vinalhaven, Maine. . . . Atlas in hand, the **Gokeys** must be off for more distant lands to conquer. Our letter to them at the Hawaiian Village Hotel was returned from Honolulu and we have sent to their home in **Jamestown, N.Y.**, to be forwarded. **George** and **Edna**, where are you? . . . The gremlins which torment The Review editors scored another triumph when they succeeded in changing our copy for the May issue and in deliberately putting **Arthur R. Gatewood**, President of the American Bureau of Shipping, into the Class of '22, right under the poised and sharpened blue pencils of the entire staff! We had reported that **Liz** was acclaimed by the Institute's Alumni Office publication "M.I.T. Alumni Make News—1964" (edited next door to the Review) for winning the David W. Taylor Medal of the Society of Naval Architects and Marine Engineers. For the goof, The Review wins the Order of the Opaque Oculars; the blue pencilers extend their apologies to **Liz '21**.

Retirement news has been received, which notes that **G. Whittier Spaulding** of 3402 Highland Street, Allentown, Pa., Vice-president of Pennsylvania Power and Light Company, has retired after more than 40 years of service with this organization and a predecessor, the Pennsylvania Water and Power Company. **Whit** and **Mrs. Spaulding** plan to spend time at their summer home in Boothbay Harbor, Maine. **Whit** was an instructor in Course VI for a year after our graduation, then successively became associated with the Plymouth Electric Company in Massachusetts and the Union Electric Company in Missouri before going to the Pennsylvania company in 1924. He served in various capacities, becoming superintendent of power and then vice-president and president of the water company. On its merger with the power and

light utility, he was made vice-president. **Whit** is active in civic, charitable and church affairs as well as in health, recreation and welfare endeavors. His memberships include the M.I.T. Club of the Lehigh Valley, the Allentown Chamber of Commerce, Lehigh Country Club and the Livingston Club. He has authored a number of papers on technical and economic subjects. **Mrs. Spaulding** is well-known as a marine painter. They have two married daughters.

Retired or not, many members of the Class of '21 continue to serve the Alumni Association in various ways. The most recent listing shows **Mich Bawden** representing the M.I.T. Club of Cleveland on the Alumni Council; **Josh Crosby** representing Bangor; **Frank Kittredge**, Monterrey, Mexico; **Ace Rood**, Indianapolis; and **Joe Wenick**, Richmond. **Mel Jenney** is a member of the advisory council comprising the directors of Technology Student Enterprises, Inc. **Charlie Manneback** of Brussels is president of the M.I.T. Club of Belgium and **Wally Adams** is the secretary-treasurer of the M.I.T. Club of the Miami Valley in Dayton, Ohio. Serving as Honorary Secretaries and Educational Counselors are: **Sam Lunden**, California; **Ray St. Laurent**, Connecticut; **Ed Farrand**, Georgia; **Harry Field**, Hawaii; **Cac Clarke**, Sumner Hayward and **Joe Wenick**, New Jersey; **Irv Jakobson**, New York; **Ray Snow**, North Carolina; **Wally Adams**, Ohio; **Si Freese**, Texas; and **Gene Rudow**, Washington. . . . The spring, 1965, issue of the Engineer, published by the Engineers Joint Council, devotes two full pages to the development and organization of the new National Academy of Engineering and two columns to a vignette of **Augustus B. Kinzel**, its first president and a founding member along with **Arthur E. Raymond**. **Gus** was active in the sessions of the symposium recently held in Washington, D.C., to celebrate the 175th anniversary of the U.S. patent system. He was a panelist at the seminar on metallurgical invention and presented a discussion of "Recent Landmarks in Creative Metallurgy." **Gus** was also the principal speaker at the installation ceremonies for a fellow metallurgist, **Raymond L. Smith**, as the seventh president of Michigan Technological University at Houghton, Mich.

John W. Barriger, Chairman of the Board and Chief Executive Officer of the Missouri-Kansas-Texas Railroad Company, gave an address on "Great Railroads in The Great Society" to the meeting of the New England Shippers' Advisory Board in Boston. **John's** theme is that our burgeoning economic life has produced "super-everything else but no super-railroads," chiefly due to restrictive "super-regulation" of existing rail lines. To the shame of our regulatory policies, he says Japan already has such a super-railroad; soon France and West Germany will, too, and we should "Unchain the Iron Horse and Let Him Run!" He gave a delightful special introduction to the speech in referring to his original attraction to study at nearby M.I.T. in 1917, when the railroads were the nation's largest corporate enterprises and represented the greatest engineering accom-

plishments. He expressed his distress that the technological gap imposed upon railroads by regulatory restrictions limited their progress from 1917 to 1965 to a level far below available potentials. In contrast, he outlined the career of Technology's famed and most generous alumnus, Alfred P. Sloan, Jr., '95, chairman of the world's great industrial complex, General Motors, and pointed out that "railroad companies without super-railroads are as handicapped as the automotive industry would be without super-highways. Had General Motors been forced to work under the super-regulatory handicaps imposed upon the railroads, that great industrial corporation's progress would also have been retarded to but one-third of its actual accomplishments and Alfred P. Sloan, like the railroad presidents of this century, would now be among the forgotten men of business." Write John for a copy of this provocative, well-prepared and certainly most timely address. His office is at the Katy's headquarters, 420 Gimblin Road, St. Louis, Mo. 63147.

We regret to report the deaths of two classmates and wish to extend to their families sincere sympathy from all of us. . . . Brigadier General **Gerald Alford Counts** of 65 Sutton Place, El Paso, Texas, retired former professor, head of the department of physics and chemistry and dean of the academic board of the U. S. Military Academy, died on July 30, 1964. He had attended the University of California before entering West Point, where he was graduated as a second lieutenant in the Corps of Engineers. He served in France with the 6th Engineers, 3rd Division, A. E. F., during World War I. He then attended Technology, graduating with us in Course I, and was assigned to duty with the Corps of Engineers on river and harbor projects in California and in Texas. He was then given duty at the Military Academy as an instructor and, later, as professor of mathematics from 1925 to 1930. He attended Caltech and returned to West Point in 1931 as a professor in the department of physics. During World War II, he served as deputy chief engineer in the Mediterranean Theater and with the 12th Army in the European Theater. He again returned to the Military Academy in 1945, serving as head of the department of physics and chemistry until his retirement in 1957. He was awarded the Legion of Merit with two oak leaf clusters, the Bronze Star, the French Legion of Honor and the Croix de Guerre with Palm, decorations from Luxemburg, Belgium and Great Britain as well as many service and campaign medals. He is survived by his wife, Anne; a daughter, Anne, the wife of Lt. Col. John M. Minor, the assistant attaché for air in the American Embassy in Paris; his mother and a brother, both of Long Beach, Calif.; and four grandchildren. We are indebted to Mrs. Counts for aid in preparing these notes. . . . **Harold Daniel Moore** of Course II and Kappa Sigma, who was long with the refrigeration division of Worthington Pump and Machinery Corporation in Los Angeles, Calif., has passed away but further details are not

immediately available. . . . On behalf of the many friends of Clayton D. Grover '22 in the Class of '21, we wish to extend expressions of condolence to Mrs. Grover, to his brother and to the Class of 1922. Clate passed away suddenly a few days before he was to have made the distinguished alumnus award at the 30th anniversary dinner of the M.I.T. Club of Northern New Jersey, of which he was a former president and last year's recipient of the award.

Enter in your date book at once the time from approximately Thursday, June 9, 1966, through Monday, June 13, 1966, for attendance at our big 45th Reunion on the 170-acre site of the Griswold Hotel and Country Club on Eastern Point in Groton, Conn., ending with the Alumni Day festivities in Cambridge. Mel Jenney's reunion committee and all of your class officers have been planning for some time and will continue to make every effort to ensure that this is not only the best reunion we have ever had but also one that is adequately provided to meet the changing conditions encountered with age and retirement status. The lovely historic spot, the spacious hotel, good food and service facilities have been particularly chosen with respect to an ideal location for ready access by air, rail, road and waterway from wherever you live. A championship golf course is on the grounds, there is a pool as well as a beach, and plenty of other outdoor recreations—plus extensive verandas for just plain sitting down and reminiscing. The reunion committee is preparing to mail you detailed program and application material, including special attractions for the ladies. Meanwhile, write to Mel or to your Secretaries for any advance assistance they can render to make certain you and your wife and guests will attend and enjoy an extra specially good vacation with your classmates. There should be no excuse for you to miss this one. Please say you'll be there! And don't miss the coming issues of *The Review* for further details of our party. Best wishes for a very pleasant summer to you and yours. —**Carole A. Clarke**, Secretary, 608 Union Lane, Brielle, N.J. 08730; **Edwin T. Steffian**, Assistant Secretary, c/o Edwin T. Steffian and Associates, 376 Boylston Street, Boston, Mass. 02116; **Melvin R. Jenney**, Reunion Chairman, c/o Kenway, Jenney and Hildreth, 24 School Street, Boston, Mass. 02108.

'22

Your secretary was happy to receive an up-to-date report from our president, **Parke Appel** by phone telling of the visit of **Dale Spoor**. Dale spent a weekend with Madeline and Parke on Old Farm Road in Dover while they organized a class cocktail party for Sunday, June 13, at 3:00 P.M. Your secretary and his favorite traveling companion look forward with pleasure to this soiree. . . . We were all shocked and saddened by the news of **Clayt Grover's** heart attack in April. Clayt was president of the New

Jersey Symphony Orchestra and had retired in 1962 as president of Whitehead Metals, Inc. He had become a director of the business in 1941 and was named vice-president eight years later. He assumed the presidency in 1954. **Bob Tonen** and **Ev Vilett** attended the funeral where several members of the orchestra volunteered their services. Of his work in behalf of the orchestra, Clayt once said: "I have loved music since I was a child and I decided I could contribute something." An amateur pianist, he spoke of himself as "an ordinary guy who likes music and loves Bach." Clayt was a member of many scientific societies, the Engineer's Club of New York, the University Club of New York and the Orange Lawn Tennis Club. He was the official class photographer and also took movies and candid color shots of the individuals and events during class reunions. He was past president of the M.I.T. Alumni Association of Buffalo and was always directly interested and active in Alumni affairs for the Institute. Our sympathy goes to Mrs. Laury Grover, his daughter Mrs. Patricia Franklin, his brother Wesley and his two grandchildren.

It was a joy to receive a good letter from **Marion S. Dimmock**, Architect, of New Britain, Conn. He recalled the years of "M.I.T. servitude at the Tech on Boylston Street." He recalled the "mountainous interior stairs in Rogers which we had to climb three or four times a day—and I shudder." Dimmy enclosed notes on a building in Jerusalem which your secretary believes is the most beautiful International Y.M.C.A. in the world. He wrote a very interesting article for the National Council Bulletin of the Y telling of his experience in 1932 in assisting in its design and superintending the final work of construction, decoration and landscaping. He chose the quotation most appropriately used: "Thine eyes shall see Jerusalem a quiet habitation." General Allenby used this quotation as the text of his remarks during the dedication ceremony in complimenting architects Harmon and Dimmock on their beautiful structure. His interesting experiences included uncovering a three sectional burial vault and working with archaeologists in disposing of the ornaments and jewels found therein. These dated from the time of the Roman occupation. . . . Coincidentally, **Roger Hayward** has written from 920 Linda Vista Avenue, Pasadena, Calif., enclosing a beautiful, large book jacket for one of his later works with Linus Pauling entitled "The Architecture of Molecules." Roger has worked with Professor Pauling illustrating Pauling's lectures and books on Chemistry, Optics, and Physics. He has patented several inventions and is an amateur scientist with several published papers to his credit. Roger Hayward is well known to the readers of *Scientific American* for his illustrations and contributions that have appeared in the magazine's department "The Amateur Scientist." Roger writes as follows: "Dear Whitworth, The enclosed book jacket gives some evidence of my recent preoccupations. Up till now it has never seemed that I had anything of interest to report to the '22 column of the

Technology Review. Although the official date of this book is 1964 it didn't actually appear until about two weeks ago. Because Course IV remained in the old Rogers Building I presume that other members have felt as I do, rather out of the main stream of interest. This is the first time I have ventured to report on my activities. Although chronic asthma rather forced me out of the active participation in the arts of architecture, I haven't been exactly idle. I suppose that in a sense I started preparing for retirement along in the '30s when my interests tended toward the sciences; geometrical optics, astronomy, chemistry and science illustrating. Thus my being confined to home has provided opportunity for expanding interests in other directions. My first job of science illustrating was John Strong's 'Procedures in Experimental Physics,' Prentice-Hall, 1938. Since then I have done texts in optics, chemistry and mineralogy for W. H. Freeman and Company. I have averaged eleven issues a year in the Amateur Scientist column of the Scientific American since 1949 and still going strong. For other details of my checkered past see Who's Who in the West. If you or any other members of my class would like to initiate further correspondence I will try to hold up my end." These personal experiences are extremely interesting to all and should be contributed by many of our classmates. Please don't fail your faithful and devoted secretary.

The sympathies of the class are extended to the families of **Carl A. Johnson**, Silver Springs, Md.; **John C. Mason**, North Eastern, Mass.; **Sibyl K. Stone**, San Francisco, Calif.; **Clifford Banta**, Swarthmore, Pa.; **Homer F. Richards**, Reading, Mass. . . . Among the changes of address are those of **Philip M. Alden**, Philadelphia Electric Company; **Robert M. Chase**, Ashland, Mass.; **Clifford Gayley**, New York City; **Joseph Greenblatt**, Orelan, Pa.; **Elmer W. Hammond**, Montebello, Calif.; **George W. King**, Jackson, Mich.; **Charles G. Moore**, Green Valley, Ariz.; **Francis E. Slayter**, Berkeley, Calif. . . . **Parke Appel** has again called reporting his trip to Columbus, Ohio, for Memorial Day and with the good news that he and Madeline will stop in Buffalo on their way home. We eagerly await their visit so they may be shown the Queen City of the Great Lakes as well as Niagara Falls and the beautiful Canadian lake shore. . . . Until the November issue, have lots of fun, keep your head down and shorten your swing for greater accuracy.—**Whitworth Ferguson**, Secretary, 333 Ellicott Street, Buffalo, N.Y.; **Oscar Horovitz**, Assistant Secretary, 33 Island Street, Boston, Mass.

'23

The June issue included an account of the kidnapping and killing of **Harold Eder** by bandits in Colombia early in April. The following additional information is quoted from the evening Boston Globe of April 13, 1965: "Dr. **Julius A. Stratton**,

President of M.I.T., today mourned the loss of his classmate, **Harold Eder**, a former Colombia government official whose body was found today some 23 days after he was kidnapped from his home. Eder's body was found near Palma Seca in the Central Andes by an army patrol with two bullet wounds that officials said were inflicted within several hours after his abduction. He was one of Colombia's richest men. Dr. Stratton and Eder were members of the Class of 1923 at M.I.T. Eder, who received his B.S. degree in electrical engineering, was manager of his country's largest sugar mill when he disappeared. A ransom of \$350,000 was demanded for his return. Dr. Stratton visited Eder last August and September. Eder's son, **Henry J.**, was graduated from M.I.T. in 1957. He now resides in Colombia. A brother, **James P. Eder**, also a graduate of M.I.T., lives in Stamford, Conn. The dead man had served as Colombia's minister of development and industry. The disappearance was linked with a series of more than 130 kidnappings in Colombia during recent years." . . . A letter from **Eduardo Icaza** of May 3, in addition to some of the information already given, says **Harold Eder** was kidnapped March 19, and that he created jobs for many who contributed greatly to the economy of Colombia and that the communists want to discourage capitalists who can create jobs. They also want to collect ransom money to create chaos in every country in Latin America. April 10, Eder's body was found with bullet wounds in his abdomen. Class condolences to his son **Henry J. Eder Caicedo**, M.I.T. '57.

Notification but no details have been received of the following deaths: **Philip W. Powell**, 455 Hyde Street, San Francisco, Calif., on February 17; **Samuel S. Elkins**, 6720 Northwood Road, Dallas, Texas 75225, on March 12; **Harold V. Harper**, 1301 Groveland Avenue, Venice, Fla., on April 14, 1964; **Aubrey W. Sells**, Box 1, R.R. #1, Three Oaks, Mich., on December 17, 1964. . . . The Alumni Office has advised of the following changes of address: **William W. Johnson**, 1840 Pasadena Street, Houston, Texas 77023; **Maurice A. Spaulding**, Jewett Street, Georgetown, Mass. 01833; **Herman Swett**, 6057-51st Ave., N.E. Seattle, Wash. 98115; **Walter N. Webster**, 7 Carriage Hill Road, Andover, Mass. 01801; **Samuel L. Williams**, 1527 Carlton House, Pittsburgh, Pa. 15219.—**Forrest F. Lange**, Secretary, 1196 Woodbury Avenue, Portsmouth, N.H. 03801; **Bertrand A. McKittrick**, Assistant Secretary, 78 Fletcher Street, Lowell, Mass. 01852.

'24

"TVA Friends Fete Walthall After 30 years Of Service," So reads the headline from a news story announcing **Jack Walthall's** retirement. Jack has been assistant manager of agricultural and chemical development for the past three years. One of his outstanding accomplishments was development of the Walthall process

for the production of alumina from clay. It brought him the William H. Walker Award of the American Institute of Chemical Engineers in 1946. Jack holds five U.S. patents and has written a number of technical articles. The Walthalls were with us on the Cape last June, and now that they are footloose and fancy-free they are very much in favor of shorter periods between reunions. "Eva and I are very much interested in class meetings in Mexico and Puerto Rico." If you are like-minded why not drop **Paul Cardinal** or your secretary a note? . . . **Bob Simonds** had planned to be at our 40th but didn't make it. At last we learn why. "Sorry, but I was in for a hip operation." No further details. . . . From **Hank Simonds** we also learned why the **Harold Youngs** failed to show. Seems **Harold** had a mild stroke a while back, and last spring when he felt another coming on they changed all their plans and stayed at home. He was well enough, however, to join **Hank** in seeing **Bishop Jimmy Wong** off as he left for his new post in Taiwan. . . . **Tom Bundy** retires from E. F. Hausserman next December and, according to **Paul Cardinal**, is not looking forward to the idea. Maybe he should get in touch with some of our other retirees, most of whom seem happy about the whole thing.

A high honor has come to Professor **Avery A. Ashdown**. If you were back for Alumni Day you were no doubt present when Graduate House, the old Riverbank Court, was renamed **Ashdown House**. Dr. Compton appointed Ave, a professor of chemistry, the first master of Graduate House in 1933, a post he held until 1962. He has had a distinguished career as a teacher, but generations of graduate students will remember him best for his deep and continuing interest in their welfare. It is a fitting and well-deserved tribute that his name be perpetuated in this manner. . . . A welcome letter from **Dave Evans** brings the news that **B. Alden Cushman** has remarried, having lost his wife, Peggy, something over a year ago. The Cushmans were honeymooning in Greece in April. **Dave** and **Myra** were in Puerto Rico last winter for what sounds like a combination business and pleasure trip. As part of the latter they had dinner with **Luis Ferre** at the Continental Hotel in Ponce. "For the past 12 years our versatile **Luis** has been collecting early or what they call Baroque art, and has amassed quite a collection. Now it is housed in one of the real old homes in Ponce, but within a few months it will be installed in a fine new building on the campus of the University designed by **Edward D. Stone**, '27—and is terrific. **Luis** is doing a magnificent job for Puerto Rico and we should all be very proud of him. He makes cement like mad, builds great art museums, employs God knows how many people, and creates industries in this interesting island. His foundation is sending a great many students through college and doing many other wonderful things. **Luis** is one of the great people of our generation." . . . And on this high note we end another season of class notes. Make the most of your summer, drop

your secretary a card now and then, and we'll be back together in the fall. —**Henry B. Kane**, Secretary, M.I.T., Room E19-439, Cambridge, Mass. 02139.

'25

The 40th Reunion will be past history when you read this column; and if you fail to make it, we will try to make you feel sorry with our first report in the fall! . . . As has been mentioned previously, many fine letters have come to your secretary expressing regrets that they could not be at the reunion. One came from **Bill Herbert** who is in Houston, Texas, where he is a consultant for the Lufkin Foundry and Machine Company on Oil Field Service. He could not make the reunion because the Society of Petroleum Engineers was meeting at Billings, Mont., on June 10 and 11 and it was essential that he be present at those meetings. Bill gave a rundown on what he has been doing in the past 40 years which will certainly be of interest to his classmates. Following graduation as a mechanical engineer, he worked in raw sugar manufacture in Cuba and Louisiana until 1932, five years being with the United Fruit Company in Cuba. In 1933, he joined the Texas Company as a rotary rig helper and progressed as a petroleum engineer, equipment and standardization expert; division petroleum engineer at Fort Worth and Houston; and was then loaned to Iranian Consortium as manager of technical services at London in 1954 and 1955, and as assistant to the division manager in Houston until his retirement on July 1, 1964. He has been active in many of the petroleum societies as well as the Houston Chamber of Commerce; and following retirement he established himself as a petroleum consultant, setting himself up as an oil field service for analyzing down hole conditions of pumping oil wells for Lufkin Foundry and Machine Company.

Henry Williams has written from Orlando, Fla., expressing his regrets that he could not make the reunion. He is now retired, considers Orlando the "garden spot of the world" and invites any members of the Class of 1925 who are down that way to look him up at 1255 Wilkinson Avenue. . . . The New York papers carried the sad news on March 27 of the sudden passing of Vice Admiral **Calvin T. Durgin**, U.S.N. (Retired). Admiral Durgin was one of the several naval officers who obtained his master's degree at M.I.T. with the Class of 1925. Following his retirement from the Navy in 1951, he had served as president of the State University Maritime College at Fort Schuyler and had retired as president in 1959 to reside in Dogue, Va. He collapsed and died while attending a performance of "Tosca" at the Metropolitan Opera House in New York. Admiral Durgin's career in the Navy commenced with his graduation from the Naval Academy in 1916 and was consummated in his becoming deputy chief of Naval Opera-

tions for air, the highest aviation post in the Navy. His interest in aviation began in his assignment for instruction in flying at Pensacola, Florida, in 1919; and as a Navy flyer, he served in N.C. flying boats, observation aircraft and on carriers before he obtained his master's degree in aeronautical engineering at the Institute. Following his graduation from M.I.T., he served in the engine laboratory at the Naval Aircraft Factory in Philadelphia until 1929, when he was named fleet aviation officer on the staff of the commander-in-chief, Atlantic Fleet. In 1931, Admiral Durgin was assigned to the office of the chief of Naval Operations. But the following year he was returned to sea duty aboard the carrier *Saratoga*. In 1934, he was named executive officer of the Naval Air Station, Norfolk, Va. Until shortly after World War II began, Admiral Durgin commanded the tender *Wright* and the *Utility Wing*, Pacific Fleet, and was on duty as director of the Flight Division, Bureau of Aeronautics, with the rank of captain, when he was given command of the carrier *Ranger*. For his handling of the *Ranger* in the invasion of French Morocco in November, 1942, he was awarded the Commendation Ribbon. Promoted to rear admiral in February, 1943, as commander, Fleet Air, Quonset Point, he won the Legion of Merit for his work in training aircraft squadrons for combat duty. In 1944, he was back in European waters as commander of a task group of allied carriers and companion craft supporting the invasion of France. He won additional citations from the French and British governments as well as his own. Before that year was out, Admiral Durgin was in the Pacific, commanding an escort carrier force in the invasion of Mindoro, and, a month later, Luzon. In March, 1945, this force participated in the battle of Iwo Jima, and it also was in the Okinawa action two months later. After the war, Admiral Durgin held various commands until he was promoted to vice admiral late in 1948, and shortly after that was named deputy chief of Naval Operations for Air. We of the Class of 1925 regret the passing of Admiral Durgin but are most certainly honored by having him included as a member of the Class.—**F. L. Foster**, Secretary, Room E-19-702, M.I.T., Cambridge, Mass. 02139.

'26

Your secretary is still making good use of the correspondence from classmates who have come to the rescue during a period when notes have to be put together with a little more effort than usual. We are now getting out to Pigeon Cove on Sundays to inspect progress on the new class of '26 headquarters. The excavation finally is complete after a struggle with granite of every description. We hope that the footings will be in next weekend and that by the time we write the Fall issue we can at least say there is some kind of roof overhead. Inspectors from the class will be welcome during the

summer. . . . We have already mentioned that **Gordon Spear** has retired from General Motors. Let's see what he says about his plans in a recent letter. "Dear George: I retired as of March 1, so am now a member of the unemployed for the first time in 38 years, and have been on vacation in Florida since February and arrived here February 22 for the rest of the winter. We plan to stay until May 1 and then return to Michigan. I might see you this summer because we are coming to Massachusetts, Maine and the Maritime Provinces for about six weeks. In November or December we have booked a round-the-world cruise on a Dutch freighter and will spend one month in Arabia visiting our classmate and my good friend, **Shantanu L. Kirloskar**, who is one of the foremost industrialists of Arabia. We saw him in December when he was in the U.S. and he told us he would meet us in Bombay when the ship lands and would see that we see all his relatives who have visited us over the past 35 years—they deliver us to Calcutta a month later to continue our voyage. We are, of course, coming east in June, 1966. I'll try to be a better correspondent, since I always enjoy the '26 class notes in *The Review*. Best wishes until I see you in '66 (or maybe in '65), Gordon Spear."

Another classmate who came to the rescue with a letter is **Ben Richardson** who writes from Old Greenwich, Conn. "Dear George: I am still with Electrolux (37 years this summer). We still have our properties in Vermont, although the dairy project was discontinued last year. Our younger daughter, her husband and four lively children are now living with us in Old Greenwich. I chatted with **Bird Kelly** on the telephone recently and hope to see him after I get untangled with a civic chore, namely the Greenwich Jury List. Greenwich has a bit over 31,000 voters so the task of our committee is to find 1,080 persons who are qualified and do not have cause to claim exemption. George, the '26 column is the first item read as each *Review* is received. Best regards. Sincerely, Ben Richardson." Thanks for writing, Ben! . . . Finally, our reunion chairman has kindly summarized a recent meeting of the clan to discuss reunion and class gift plans. "Dear George: Sorry you were not able to attend our dinner on Thursday evening. I know that only something as compelling as your unusual inner ear problem would have kept you from coming. I am sure you will want to hear about the dinner. Present were Bob Dawes, Stark Draper, Harry Howard, Jack Larkin and Charles Rich from St. Albans, Vt. (We were lucky that our date was such that Charlie could tie it in with a trip to Boston.) Austin Kelley came up from New York and Chick Kane and Ken Brock of the Alumni Fund were there to give us moral support. It was a very enthusiastic meeting, and the utmost cooperation was indicated by those present to aid us in contacting our alumni in the eastern part of Massachusetts, Vermont, New Hampshire, Maine and Rhode Island. Austin hopes that alumni in other metropolitan areas will have an organizing meeting as

successful as the one that we had. We had letters from a number of classmates who would have liked to come but who were tied up with firm commitments. **Jim Drain** was in town for that night, but he was the principal speaker for a Society of Value Engineers. Jim must know something about value, as the stock of Joy Manufacturing, of which he is president, has increased greatly in value. **Mark Greer**, who is doing an excellent job in Connecticut for our Reunion Fund, wrote that he is also general chairman for their Boy Scout Council Camp Development Fund in a drive to raise \$200,000. This, in addition to his Tech campaign, is keeping him all tied up. Others unable to come were **Charlotte T. Phillips**, **Bill Lowell**, who was in Europe most of April, and the **Rt. Rev. Arthur J. Riley**, who was a speaker that night at the Sodality Society. We also heard from **Stan Sawyer**, Exeter, N.H., who was otherwise tied up. **Bill Meehan** was going to be out of town most of the week. **Rex Bristol** was host to Governor Volpe for the annual meeting of the Massachusetts Foundation. Many others called and pledged support for our plans for the reunion but were unable to make it at that time. We discussed the offer of the Institute to make available McCormick Hall for the Sunday before Alumni Day and for Alumni Day itself. This is the newest and most plush dormitory at the Institute. Our co-eds would, of course, have to have the best! The group voted to accept this offer of Tech's, and McCormick Hall will be available on the basis of first come. Tradition broke down in the Class of '26, and it was unanimous that we would—for the first time—actually invite the ladies. I guess we are about the last class to give in on this subject! With wives invited, we will have considerably more attending than in the past. With the limited facilities at McCormick Hall, which holds only about 80 or 90, the smarter ones are going to make reservations early next year to be sure of their accommodations in McCormick Hall. The over-flow will be housed in Baker House, which is still a pretty nice place, or some other dormitory. The practice for classes using McCormick Hall is to have dutch treat parties, including buffet dinners and breakfasts in the dining room and penthouse. We will plan package registration which will take in Alumni Day and these facilities as well as the events at the Belmont in Harwichport. Some classes are publishing reunion books that have a biography of nearly every classmate and articles of mutual interest. Through an oversight I didn't bring this particular subject up at the meeting to ask them whether they felt that we should attempt to work out a Reunion book. I believe, however, that you might want to bring this subject up in your notes and invite people to write in the history about themselves; and if we can get enough of these to make it worthwhile, we can put them into book form. In any case you will have lots of material for your notes if we can use it in this fashion. I would like to get an expression of opinion from our classmates as to whether they would like to

have such a book issued. I feel we are off to a good start, and if the momentum already evident is maintained, we certainly ought to have a very successful reunion and a very memorable Class Gift to present at that time. Sincerely, **Don Cunningham.**" Many thanks, Don. I agree that we are off to a good start and your meeting should set a fine example for future similar meetings in other parts of the country. I hope to attend some of these meetings with Austin Kelley. May all of you have a pleasant summer relaxing or touring as you see fit and don't forget to send a note or postcard to your secretary so he can report your whereabouts. Cheerio until Fall!—**George W. Smith**, E. I. du Pont de Nemours & Company, Inc., 140 Federal Street, Boston, Mass.

'27

In the May class notes, **Glenn Jackson** asked who, besides **Don Spitzli** had had a part in some political activity. This has brought forth the following interesting comments from **Dave Knox**: "My experience in politics has been entirely at the local level. After serving as city commissioner from 1943 to 1948, I was elected mayor of Huntington Woods, Mich., for a two-year term. This is a small suburban community of about 8,000. Although it was a stimulating experience I did not run for re-election. With three children in their formative years and a responsible job, I felt I couldn't give adequate attention to all three activities. However, I did spend another 10 years as a member of the city planning commission. Think the high point (or low point if you prefer) of my career in local government came when I as ex-mayor and the members of the commission were used in federal court for conspiracy against a local garage owner under the 14th amendment. We won out but I am now gun-shy of politics and much prefer engineering. Our library is greatly indebted to my good wife Dorothy for her untiring work in nurturing it from one room in the school to the magnificent structure which is now called our cultural center. She has been a member of the Library Board since its inception and has served as its chairman. I have been with Bundy Tubing since 1932; chief engineer since 1939. I was appointed plant manager in 1955 and director of engineering in 1961. My next step, retirement, is being shared by many of the 1927 gang. Life has been good to me in many ways. My son David 3d, (not an engineer) and daughter Janet are both graduates of the University of Michigan. The youngest daughter Margaret finishes Michigan State in June and will intern at Peter Bent Brigham in Boston as a hospital dietician. I see **Joe Yates** occasionally and according to the Detroit Engineer, he has completed his requirements for the state license as a professional engineer. We should all congratulate him. I also correspond with **Tom Knowles.**" And thank you, Dave, for a good letter.

Paul Vaughan, Chief Engineer at Alco Products in Schenectady, wrote to Glenn:

"My wife and I are going to London, where I will deliver a technical paper before the International Society of Manufacturers of Diesel Engines. Because my wife does not like flying machines, we will make the journey both ways by ship. This is no hardship for me as I enjoy ocean travel." . . . The Dayton Daily News ran quite an article on the occasion of the 100th anniversary of Payne and Company, designer, converter and distributor of fabrics and foam cushioning, which has been under the leadership of **William G. Payne**, grandson of the founder, since he became president in 1935. In addition to a large plant in Dayton, a new plant opened in Elkhart, Ind., in 1963, Payne Poly Fabricators, Inc., which produces polyurethane cushioning for trailers and mobile homes. This organization is employee-owned, with Bill Payne as president. Judging by the picture in a brochure which commemorates the 100th birthday, Bill must be in fine shape, looking trim and with most of his hair. He says that he is now vacationing a bit more, in the south. A married daughter lives in Cincinnati, and a son, Douglas, is in his third year at Harvard Medical.

A.M.P. Corporation, electrical and electronic manufacturer, has elected **S. S. Auchincloss** as president. He was formerly president of Tracerlab, Inc., which merged with Laboratory For Electronics, Inc., in 1961. . . . There are many moves to record, most of which require a letter from me to elicit more details: **Tom Russell** has moved (hard to tell when) from Cincinnati to 1111 Galleon Drive, Naples, Fla. He was in the highway equipment business in Ohio. . . . **Ted Casselman**, a vice-president of Stone & Webster, has moved from New York to 96 Temple Street, West Newton 02165. . . . **Harriet W. Allen** reports a new address of P.O. Box 362 in Dover, N.H. The former address was at Nashua, N.H. . . . **Francis Thorne** retired from Kodak last year and has advised of a new set-up at 427 Luther Drive, Santa Clara, Calif. 95051. . . . **Andy Anderson**, who moved from West Hartford, Conn., to Pompano Beach, Fla., in 1959, now lives at 24 Lee Garden Apts., Bristol, Va. 24201. . . . (It would be erroneous to assume that everyone in the class is retiring. I have a list of only 15 retirees and five of these are "uncertain.") . . . 144 East Baltimore Street, Greencastle, Pa. 17225, is the new abode of **George W. Jacobs**, who formerly lived in Verona, N.J. . . . Brigadier General **William R. Frederick**, who received a master's degree in civil engineering in 1927, died in New York on January 21. Before World War II, he was with the Westchester County Park Commission and with Madigan-Hyland, Long Island City consulting engineers. Called to active duty as a captain in the field artillery, he served in the South Pacific and Japan. He also saw active duty in Korea and retired after serving as commanding general of the V Corps artillery in Europe. Bill then rejoined Madigan-Hyland and was with them until the time of his death. Besides being an engineer and a soldier, it is interesting to note that his letters dealt also with his

avocations of archeology and history and he had a keen eye for natural beauty. . . . **Thomas E. Hegarty**, a graduate of Course I, and a former official of Somerville, died at his home, 42 Minnesota Avenue, Somerville, on March 14. He had also worked for the Trimount Bituminous Products Company of Boston, and for many years was president of the St. Vincent de Paul Society of St. Benedict's Church in Somerville. . . . The death in June, 1963, of **Palmer D. Kountze** has just been reported to us. He lived for many years in Lenoir and Matthews, N.C., but at the time of his death had a home in Sarasota, Fla.—**Joseph S. Harris**, Secretary, Masons Island, Mystic, Conn. 06355.

'28

We were very happy to receive a letter from **Monte Burgess** early in May. After the usual salutation, the letter stated, "I retired somewhat early from Bell Telephone Laboratories to go into business for myself in the field of investment management. This business has exceeded my fondest expectations, and it keeps me continuously occupied in a profitable and fascinating field. It was nice to see so many classmates at our 35th Reunion, and I am looking forward to the 40th. With sincere best wishes." Incidentally, Monte's address is 139 Nassau Boulevard, Garden City, N.Y. 11530. He enclosed what we assume is a publicity release from Bell Telephone Labs, which we think might be of interest to our readers: "Montague S. Burgess, M.T.S. in the NIKE-X Communications Department, Whippany, retired January 31, 1965, after 35 years in the Bell System. He graduated from M.I.T. with B.S. and M.S. degrees in electrical engineering. In September 1929 he started with N.Y. Tel. and transferred to A.T.&T. Company a month later. He worked on transmission studies for carrier and coaxial systems, television and telephotography. His department joined Bell Tel Labs in 1934. In 1937 he began designing transformers and repeating coils for carrier and radio frequencies. During the war he designed power transformers and frequency generators. In 1947 he transferred to switching apparatus development and supervised a group concerned with electromechanical studies of new and improved switching equipment and fundamental studies of contact erosion. Since 1955 he has been engaged in military communication systems development relating to the SAGE air defense of the U.S. and later NIKE-X communications at White Sands and Kwajalein. Mr. Burgess was granted four patents on electric circuits. He wrote several articles for the Record on frequency generators and a spring-type micro-balance. He made extensive contributions to the Burgess Genealogy published in 1941. Mr. Burgess is a member of four fraternal groups. He organized a Community Concert Band in 1939 which is still active after 25 years. He is a

member of the Telephone Pioneers and the Mayflower Society, tracing his ancestry to Richard Warren, a Mayflower passenger. He and his wife, Blanche, reside in Garden City, N.Y. They have a son, daughter and grandson. Mr. Burgess will conduct an investment management business from an office at his residence."

During a business meeting in western Massachusetts recently, we were greeted by our old friend Dan O'Connell '29. We asked about **Ted Zavorski**, Course I; Dan was very pleased to report that Ted is still chief engineer of Daniel O'Connell's Sons, Inc., one of the very largest general contracting and road building firms in Massachusetts. Ted has two handsome children, one a boy in high school and a girl at the American International College in Springfield. . . . We asked in a recent report about the origin of the doctor's title that was recently added to **Rene Simard** of 130 Kamloops Avenue, Ottawa 10, Canada. We thought it might stimulate a bit of correspondence from Rene; and we are happy to publish the following biographical sketch, which describes completely and modestly the origin of Rene's doctorate: "Your reference to my 'new' doctor's title in the April Review and request to please explain came to me as a surprise. I didn't know that my modesty was so strong a quality that it could account for a secret being kept for 33 years! Now you force me to confess publicly that I did, in fact, earn a doctorate in 1932, after leaving M.I.T. in 1929 with the M.S. in chemical engineering practice. It happened this way—My good old father was willing and able to support my further studies and old Doc Lewis recommended study with Professor Herbert Freundlich in Berlin. Following his advice I managed a spot in the professor's lab, where I worked on a doctor's thesis concerned with absorption reversal in colloidal suspensions. Now, as you may know, all sciences in German universities belong to the faculty of philosophy, hence the Ph.D. This also causes one of the requirements for the degree to be an examination in philosophy. It so happened that another Canadian graduate from M.I.T. was working downstairs with Fritz Haber and he finished his work before me, took his doctor's examinations and failed philosophy. This scared me no end and made me realize that I would need a good knowledge of Kant, Leibnitz, Nietzsche and Schopenhauer. Knowing my limitations, I couldn't see myself understanding these fellows in French or English, let alone in German and, to add a touch of irony, I wasn't supposed to read anything in those lines but St. Thomas. Luckily a lab colleague from Prague explained to me that the German University in Prague gave a Doctorate in Natural Sciences, thus requiring only physics-chemistry exams. So I chickened out of Berlin and did get a title which is not Ph.D. but is abbreviated as Dr. rer. nat. (rerum naturalium or natural sciences). I might add that the University of Prague is the oldest one in Europe except for one in Italy, having been in business for over 500 years. I frankly don't remember how the 'Dr.' got tacked on to my name in the Alumni Reg-

ister since I don't use the title normally. So there is your explanation—do with it as you wish. Best regards."

A copy of Flight Forum, an activity sponsored by Connecticut General Life Insurance Company, recently crossed our desk; and because it was concerned with "a discussion of the supersonic transport in relation to the needs of modern aviation and the requirements of national priorities" with our classmate **John Stack** listed as a member of Flight Forum's advisory committee, we looked through the brochure and found that John's opinions pretty much determined the tone of the discussion. John's photograph accompanied a brief biographical sketch, which we think is worth quoting at this time: "Mr. Stack is Vice-president and director of engineering and a member of the Board of Directors, Republic Aviation Corporation. Before joining Republic, Mr. Stack was director of aeronautical research for the National Aeronautics and Space Administration. One major contribution to the advancement of his field was his direction of the research which produced the variable-sweep wing design concept used in the TFX (F-111) fighter and currently under consideration in the development of the supersonic transport. For this and other contributions, Mr. Stack was the 1962 recipient of the Wright Brothers Memorial Trophy. He was co-winner of the Collier Trophy in 1947 for his share in the achievement of the first supersonic flight by a U.S. Air Force research plane. He won the Collier Trophy again in 1951 for his work in transonic wind tunnel development. He delivered the Wright Brothers Lecture, Institute of the Aerospace Sciences, 1944; received the Sylvanus Albert Reed Award, Institute of the Aerospace Sciences, 1953; and received the Medal of the Society of Engineers, Sweden, in 1951."

From E. I. du Pont de Nemours and Company we received news of the retirement of **George Rigby**, who received his master's degree in '28. He certainly had a worthwhile and productive professional career with Du Pont, as you can judge from the following release: "Dr. George W. Rigby, who was a member of the Du Pont Company's original nylon research team, will retire on March 31, after a company career of over 34 years. He is a member of the staff of the company's development department. Dr. Rigby first became associated with Du Pont as a research chemist at the Buffalo, N. Y., rayon plant in 1930. Two years later he moved to the company's experimental station here in Wilmington, Del., and joined Dr. Wallace H. Carothers in the research that led to nylon. In addition to his work on nylon, Dr. Rigby also conducted research on cellulose amines, nylon intermediates, tetrafluoroethylene and polyethylene. He has contributed many papers to the literature of chemistry and more than 30 patents have been granted on his work. In 1945 Dr. Rigby moved out of the research laboratory into the company's development department. This assignment was interrupted in 1955 when he became a member of the international department for a short time to follow technical and research develop-

ments for the company in Europe. In 1957 he returned to the staff of the development department, the position he now holds. A native of Oregon, Dr. Rigby received a Bachelor of Arts degree from Willamette University in Salem, Ore., in 1927. In 1957 he was granted an honorary Doctor of Science degree from the university with a citation for "pioneering work on nylon." He held the Swett Fellowship and the Du Pont Fellowship in chemistry while attending the Massachusetts Institute of Technology where he was granted the Master of Science and Doctor of Philosophy degrees in 1928 and 1930, respectively. He has also taken graduate courses at Washington State University and the Wharton School of Finance and Commerce at the University of Pennsylvania in Philadelphia. During World War II, Dr. Rigby served on the National Defense Research Committee. He has also been a member of the Chemical Subcommittee of the Munitions Board and the Task Group on Industrial Alcohol of the President's Bipartisan Committee on Increased Industrial Uses of Agricultural Products. Dr. Rigby is a member of the American Chemical Society, the American Oil Chemists Society, and the American Association for the Advancement of Science. He has been active in organizations devoted to the arts and drama and is a member of Grace Methodist Church. Dr. Rigby lives at 1604 Shipley Road, near Wilmington."

It is our sad duty to report the death of **Archie Protopapas** of 112 East 19th Street, New York City. We received this news from the Alumni Register, but no date of the death was given. Archie was a graduate of Course IV.—**Herman S. Swartz**, Construction Publishing Company, Inc., 27 Muzzy Street, Lexington, Mass. 02173; **James Donovan**, Treasurer, Artisan Metal Products, Inc., 73 Pond Street, Waltham 54, Mass.

'29

Here we are at the end of one season of class reporting and, from the notes, you can see how helpful the questionnaires were in providing material for your secretary—without them I'm afraid the news would have been rather meager. So, thanks again to all who responded to the questionnaire and if your name hasn't appeared as yet, be assured it has not been overlooked. We still have many replies from New Yorkers and New Englanders to report on, and we will start off with some of our classmates who have settled in New York State. . . . **Harold Straat** of Rochester, Director of Mechanical Development in R&D at Bausch and Lomb, Inc., sums up his life thus far: "I have been industrial physicist, engineer, and father for over a quarter century doing those million and one things needed to make a smooth running system. Now time seems to travel faster and faster probably because life is so interesting. Without doubt my training at M.I.T. has greatly contributed to my

keen appreciation of the wonderful world we live in." . . . **Henry Robbins**, 2955 Grand Concourse, Apt. A-25, Bronx, New York 10468, though retired and admitting he has kept his nose to the grindstone too much, is head-over-heels in several pursuits. He is the author of "One Small Candle, The Story of the Mayflower's Voyage and the Pilgrims' First Year in America," which was condensed in the December, 1963, Reader's Digest. But a special hobby is his Peugeot 403, especially improving the m.p.g. He has compiled statistics on its performance and has written a paper "Economy Driving"—in case anyone would like a copy. Other Peugeot fans would have a ball comparing notes with Uncle Henri. . . . **Ralph Young**, Schenectady, was on the staff of the chemistry department at M.I.T. from 1921 until 1955 when he retired—an admirable record.

Leo Goldstein of New York City, after working for eight years as a chemical engineer and in research in the paper industry, has been in teaching ever since then. He is chairman of the mathematics and science departments of the Food and Maritime Trades High School—and in addition, teaches chemistry evenings at Queens College. . . . **Jarvis Hazard** of Bellrose has owned his own business since 1947 in which he specializes in made-to-order hearing aids—the Jarvis M. Hazard "Audivox." Besides this he has been busy, what with Bell Labs, electrical engineering, communication equipment for defense, and also amateur sound motion pictures and radio building. Jarvis lists walking as one of his hobbies and we know he well means it as he adds he has never driven a car. Imagine he must be in very good shape! Jarvis sends greetings to all '29ers. . . . **Charles Henshaw** of Chazy is development engineer with The Sheridan Company of Champlain, and a licensed professional engineer in New York State. Charles, you missed the second page of the questionnaire! . . . **John Happel**, Hastings-on-Hudson, is probably just about now in Japan on sabbatical leave from N.Y.U. in connection with research interests. On a previous sabbatical he went to Germany with his wife, a concert violinist. He is the author of "a couple books" and a number of technical articles. John is now professor and chairman, Chemical Engineering Department, N.Y.U., after first working 17 years for Socony-Mobil Oil Company. . . . **Ruth Davies Van Wagenen (Mrs. Robert G.)** of Syracuse, married soon after graduation from M.I.T. and has not directly used that education (but we'll excuse her), but has had a busy and happy life and can't believe it is 35 years. She and her husband do considerable traveling especially to visit their children in the far reaches of the United States. Among her hobbies is a mysterious one, "working as State Board Member of a woman's group called P.E.O. No one but the members know what the initials stand for but they can very well signify a philanthropic, educational organization. We support a junior college and give scholarships to foreign students for advance degree work." Ruth corresponds with **Connie Sharp Sammis** at Christmastime.

Robert Parker of Troy is director of material specifications at Tek-Hughes (Division of Johnson and Johnson), and with his wife Elizabeth enjoys travel and home movies—and his son's family. . . . **George Buckbee**, Scarsdale, is divisional controller of Aircro Company International, export division of Air Reduction Company, Inc. He was at one time with a public accounting firm. . . . **James Reddig**, West Webster, writes, "I was chasing airplanes when I left Tech, and am still doing so. I followed the industry up and down the East Coast until 1939 when Kodak decided they wanted an aeronautical type on tap. So I have had 26 years with Eastman Kodak Company. If a photographic problem had wings, I seemed to get involved. I look back with nostalgia to the days when airplanes were fun, not computers. One of my 1936 airplanes, the Fleetwings, all stainless steel Seabirds, is still flying in Florida, and I just saw a second being repaired for flying on the coast—after 28 years! I have been flying as an avocation since 1929 and it rubbed off on my eldest son, who is a bomber commander in S.A.C., a career officer. I owned an airplane for a few years and got involved in civil air patrol when that started in 1941. I went to Europe in 1959 for C.A.P. But Eastman Kodak Company keeps me busy: three trips to the coast last month, etc. I have a nice home on the shore of Lake Ontario—a penthouse on top of my do-it-yourself workshop." . . . Also connected with aviation, **Edward Godfrey** of Huntington, Subcontract Manager for Grumman Aircraft, expresses "Much gratitude to my basic M.I.T. education—wish I'd been more successful to express my appreciation by endowments." One of the Godfreys' successful sons is also an M.I.T. alumnus. Edward's hobbies are "Sailing, children, and now grandchildren."

Marshall Fay, Port Washington, first did a stint in the Army Air Corps as flying cadet, graduating as second lieutenant. Since then he has been with United Airlines in various positions including 10 years as flight manager, to the present one of eastern regional manager of flight operations, located at John F. Kennedy Airport. This last post he has held since 1952. . . . We have an airline captain's nutshell view of flying, from **James Magenis** of Manhasset and Pan American World Airways, Inc.: "With present-day jets, I just yo-yo across the North Atlantic or down to the Caribbean—every trip is different with equipment problems, weather problems, airway traffic control problems, noise abatement problems, and even passenger problems—of course, not to mention F.A.A. inspectors and company check pilots—but I wouldn't trade for any other job!" . . . We'll continue with the rest of the New Yorkers in the next issue and will save the New Englanders for future reporting. Olive and I are leaving May 11 on a short vacation trip to Yugoslavia and hope a wonderful summer is in store for all of you. If your leisure summer hours are conducive to jotting down a few news items, we will be very glad to hear.—**John P. Rich**, Secretary, 67 Berkeley Street, Nashua, N.H.

Before the summer interruption of these notes, here is a current report on our star roving reporter, **James Harper**, Col. C. E.—Ret. Jim retired from the Army last May and since then has been a consultant with the Research Analysis Corporation in McLean, Va. I detect a certain satisfaction in his letter in becoming a normal resident of the D.C. area, but after the wide and constant travel in his last Army assignment I won't be surprised to receive his next letter from the South Pole with news of the class of '32ers he has contacted there. His work involves computer-assisted war-gaming, which he explains is research to assist the government and the military in decision-making in present and possible future conflict situations. It's sort of comforting to know we have a corporation, a computer, and Jim figuring out ahead of time what moves we probably should or should not make when a "situation" arises. . . . **Richard W. Berry**, Vice-president of the United Fruit Company spoke on "The Refrigerated Fruit Ship" at a seminar of the department of naval architecture and marine engineering at M.I.T. in April. . . . **Harner Selvidge** was elected a director of **Cohn Electronics, Inc.**, in March. He is vice-president and general manager of Meteorology Research, Inc., of Altadena, Calif. He was director of special products development for the Bendix Corporation before 1960 and a supervisor at the Applied Physics Laboratory at Johns Hopkins University during the war. . . . **Arthur J. Seiler** was appointed to the post of chairman of the executive committee of the Bunting Company, Philadelphia, in January. He will continue to act in his capacities as president of the Lamont Gear Company, Philadelphia, and chairman of the board of Alloy Surfaces Company, Wilmington, Del., as well as director of several other companies.

Rolf V. Wallin was appointed vice-president—engineering, of the Olefins Division of Union Carbide Corporation in February. He is also continuing as vice-president—engineering, of Union Carbide's Chemicals Division. He joined Union Carbide in 1933 in the engineering department of the Chemicals Division at South Charleston, W. Va., and was appointed director of engineering in 1956. He has been vice-president—engineering, since 1959. . . . **Robert K. Mueller** was re-elected member of the board of directors of the Monsanto Company at the annual meeting in March. . . . **Edward N. Rosenquist** of the Monsanto Research Corporation, Dayton, Ohio, was elected to represent the Dayton Section of the American Chemical Society on the society's national council. He is laboratory director at Monsanto. . . . **William J. Hallahan** was elected a director of **Fay, Spofford and Thorndike, Inc.**, Boston, in February. He is an associate engineer with that firm. . . . We can add to the previous note that **Joseph Welch, Jr.**, had joined the Boston Evening Clin-

ic, that he is director of development for the clinic and will handle fund raising, public relations, and administrative functions for the organization established 37 years ago to provide low cost medical care for patients in moderate and low income brackets. . . . Have a good summer and a relaxing vacation and send me a picture postcard from wherever you are. I'll be attempting to foresee the needs and solve the problems of moving some 400 academic and research staff and their equipment into the new Center for Materials Science and Engineering building recently completed on the old main parking lot just behind the dome. Yes, parking is one of those problems.—**Elwood W. Schafer**, Secretary, Room 13-2145, M.I.T., Cambridge 39, Mass.

'33

Well, Gentlemen (and those few 1933 gals who refuse to be known as grandmothers), this is the last set of these immortal notes for this academic year and none appear in August, September or October, so, all you prolific correspondents will have to wait, but patiently. Incidentally, these notes average five hours in preparation, and it takes about one minute to write a postcard, although few of you will spend even that much time. . . . No press clippings as yet, so we start off with such personals as come to hand, thanks to **Cal Mohr** and only one or two others. . . . **Bill Brothwell** sends me what is labelled a "speed letter," and I will wager it took him more than one minute as it is 13 lines, typed. It came by first class mail forwarded, which reminds me of the fellow who always sends his outgoing mail par avion, even if it is to go only to the next street. Bill is a bit vague, but it appears that he is going into research (half the time only) in the Art Fuller, '31, plant in Woburn, Mass. He is a salesman, and his research will be in that field, regardless of the rather high falluting names he hands out. Boiled down, it becomes "invasion into some of the lightly held technical fields, such as clean room air filtering, and its related gadgets." Thanks for the note, Bill. It may encourage others to follow suit. . . . From Detroit, comes a release by Detroit Edison, regarding **Charles E. Quick**, complete with photo. Charlie succeeds some lesser light who has been promoted, and Charlie becomes "chief of the general engineering department's project coordination division." Now, fellows, just look back at that! I refuse to believe that the Detroit Edison ever bestowed any such title. Only an engineer could garble it up that way. Anyway, Charlie is rapidly forging ahead towards the top. Drop me a card, Charlie, when you get there! And our best wishes in the new job.

I have a fine note from **Bill Rand** (Calif.), who is interested in our possible regional meeting in California, come another year or so, and Bill seems quite taken with the idea. Mostly, Bill goes on to list the possible meeting places, with due note of concentration of classmates,

climate, recreational facilities, et al. We can hold only one class regional meeting in California, if that, but should we do so, please regard this as a very early notice of our intentions. **Ed Goodridge** and **Jim Turner** are the bosses, and they will decide if, when, and where such a regional meeting will be held. In sending in your opinions on the above, keep in mind the climate of your favorite section in late May. I have been in the state, and all over it, in most months of the year. I have a very definite opinion on where such a meeting should be held, but nobody asked for it, yet, which should hold me for a bit. Thanks, Bill. Your letter goes in the follow up. If I file it, it is lost. I will use it, later. . . . From **Cal Mohr** comes the expected, and welcome news of his travels, and meetings attended, and who was seen. He attended the Chicago M.I.T. meeting March 11, and with **Pete Parker**, met a brace of classmates at that session, at which Dean Gordon Brown of the Institute was the principal speaker. Pete is chief chemist of Kolor labs, who make a line of cosmetics, and all such. Pete's son is working for the Jewel Tea Company, and lives right near his dad. No mention of grandsons. . . . Cal asks me to note that **Ivan Getting** has or had, recently attended a meeting of the M.I.T. Corporation, and suggests that I try to get from Ivan an idea, for the notes, of what transpires at these meetings. Cal, have you ever tried to get a word out of Ivan. You try. . . . Cal seemed to know well in advance that **Dayt Clewell**, of beef stew fame, is a candidate for election to the corporation, and, since getting Cal's letter, I have voted for Dayt. Some of you will remember that Dayt runs a filling station or perhaps he is vice-president of Socony Mobil Oil. It will look it up. May we have a paragraph on the proceedings of a Corporation meeting, in a general way? Thanks, I knew I could count on you; and, speaking for the class, our congratulations.

Course VI men around Chicago want to know a little about **Henry Rahmel**. To Mrs. Rahmel: please talk him into sending me some tidbits about the Rahmels. Incidentally, it was **Dean Brown** who inquired about brother Rahmel. It seems that they used to be co-workers. . . . In reply to the notice of the class regional at Pheasant Run, **Ralph Cross** said that he might be out of the country at that time. Ralph, we always like to hear about the travelers (and the excuses for non-attendance). . . . **Bill Pleasants** is still in Eire, or Rome, but this is stale news to you avid readers. Well, at least Bill wrote me, which makes him a member of a small and select club. . . . Now comes **Ellis Littmann**, from St. Louis, of course, attending a chain manufacturers meeting. I fear that Ellis' story was quite confidential, as nothing personal came out of his phone call to Cal. Ellis is the St. Louis representative for the Chicago regional class meeting. He did mention that **Nat Green** is recently a father and very recently. And he won't even brag! Ellis also hears or sees, that **Bob White** has recently had a promotion. He did not say where, and had

no facts, so, in the faint hope that Bob reads this, and with less that he will write us about the promotion, we at least make the mention. You now have the ball, Bob, so let us hear from you.

In a note from Cal Mohr, when he breaks the news that the Chicago regional is off, he sends in more news. As for the proposed meeting, it appears that the boys are all too busy, and did not have enough early notice of the meeting. I guess that we were a little late in telling them, when we find they had only three months' notice, or was it four, Cal? . . . More on Nat Green, who, it appears, has a new address, still in St. Louis. Cal, I get the addresses from the Alumni Association, so the system has broken down, momentarily. No scoop. . . . In addition to the above, **Bob White** is going to Europe, in late May, complete with wife. No word as to why. Bob, as I am familiar with most of Europe, can we not compare notes? . . . Here we have a combo! **Dave Treadwell**, and **Skee Sysko** are, of course, both with Du Pont, and both at Wilmington. Dave in bridge competition, and is also in the planning division of Du Pont's industrial and biochemical department. Adam (Skee) is busy these days buying equipment for the dye division. I know that all your friends would be more than interested in a few details. I'll wait.

We hear from **Otto Putnam**, through Cal of course, still with Althouse Chemical Company, dyemakers, and Cal is now expanding the new plant that he built for them last year. These things seem to move so fast as to remind one that the situation is about the same as reading yesterday's newspaper. I gave Otto a chance to write last year, but he is adamant. . . . I have a plug from Cal Mohr on the soccer team. Cal read about the soccer team (M.I.T.) in the April issue, and found that the goalie made 134 stops in 11 games, which makes the front line, and the backfield about the same quality as when he was playing the game, almost 35 years ago. He goes on to suggest that the Institute ought to make soccer playing a required subject for admission, if they ever wish to get away from those 134 stops. . . . To the classmates living in the 300-mile radius area, centered at Chicago, won't you drop me a note and tell me why the meeting was of no great interest to you, off the record? Your officers are interested in these regional meetings mostly to cut down the distance the boys have to travel to visit with M.I.T. men. We had a very enjoyable meeting in New London last year, but Chicago flunked out, badly. Be assured that nothing you tell me will appear, as a quote, in the Review. We just want to know as we have plans for other, and more remote meetings, perhaps Florida, or California.

Well, ladies and gentlemen. no more writing, cajoling, supplicating, or anything until September first, at which time we prepare the notes for the November issue. So, there is no hurry this time, but the task is never to be forgotten. I have an offer to make. To every fellow and girl who will write me, address at the foot of the column, asking for stamps, I will send

three (3), which makes it a net gain, for each, of two stamps, but, they must be used on envelopes addressed to me. I am willing to try anything, and if it is not the stamps that are holding you back from writing, then we will try something else. It can't be just plain laziness, as M.I.T. men are not gifted with that.

Our very best, personally, for the good summer.—**Warren J. Henderson**, Secretary, Fort Rock Farm, Exeter, N.H.

'34

The scarcity of news will become painfully apparent the farther you read! Received an anonymous card which said: At the Winter Annual meeting of A.S.M.E. **Karl Gardner**, '34, of the M. W. Kellogg Company was presented with a memorial award for his contributions to the technology of heat exchanger design. . . . Four of us '34ers ride the 5:25 P.M. out of Grand Central almost every night: **Charles Lucke**, **Charles Parker**, **George Patch**, and **George Puggen**. . . . Have a good summer and come up writing!—**Charles Parker**, 3 William Street, Norwich, Conn.; Co-secretaries: **W. Olmstead Wright**, 1003 Howard Street, Wheaton, Ill.; **Kendrick H. Lippitt**, 3782 Putter Drive, Chula Vista, Calif.; **Norman B. Krim**, 15 Fox Lane, New Centre 59, Mass.

'35

As you read this our 30th Reunion is history, but at the time of writing we have a month to go. Eleven of us on the class steering and reunion committees met at the M.I.T. Faculty Club on May 6 for a final wind-up meeting. Those present included **Bill Abramowitz**, **Dick Jarrell**, **Irving Banquer**, **Dave Cobb**, **Randy Antonsen**, **Bob Forster**, **Leo Beckwith**, **Andy Andreoli**, **Jack Hossfeld**, **Art Marquardt** and **Allan Mowatt**. There were 42 couples and one single registered for the weekend and a final push was developed to see if we could reach 60. . . . Most of the bits of news I have were received in the course of signing up classmates for our Fifth Annual Golf Tournament. **Bob Forster**, **Gordon Scowcroft**, **Les Brooks**, **Ham Dow**, **Leo Beckwith**, **Art Marquardt**, **Sid Grazi** and **Dick Bailey** were among the first to report in. . . . **Edgar Staff** sent in his dollar but will be unable to play. . . . **Paul Gilmont** wrote from Costa Mesa, Calif., that he no longer belongs to a club and "my occasional forays on the municipal course are strictly for the birds, not birdies. The gang from the lab here sneaks out early Wednesdays to knock off nine, but I doubt that with the cheating (the only way I can win) we could get an attested score," and he is sorry he can't join in this year. . . . **Ham Dow** reports that his wife, **Edith**, is taking golf lessons although she may not be ready to tackle a course in June. I can

tell you from personal experience, that if her golf game gets to be as good as the Finnish pancakes she can make, **Ham** and the rest of us are going to take a beating. . . . **Wes Loomis** wrote that his golf gives him some satisfaction but that it's disgusting to watch so he thinks it the better part of valor that he withdraw from this year's competition. (And I wish I could quote his letter exactly.) He adds: "My game has gotten this way because, in addition to a very hectic travel schedule, **Polly** and I have bought a rather ancient house facing Lake Michigan. My Saturdays and Sundays are now spent in putting the house back together again."

News from here and there: **Mrs. Kulp** wrote to report the death of her husband **Robert K. Kulp**, Course III, in Scottsdale, Ariz., on October 21, 1964. . . . **Art Haskins**' son **Dan** is teaching at the Franklin Institute in Boston while daughter **Carol** is a fourth grade teacher in Kittery, Maine. . . . **Walt Stockmayer** reported he is rowing thrice weekly at Darmouth "in an old men's crew with average age of 37." Stocky is well preserved, they have him at one of the power positions—number six. . . . **Gerry Feyling** has an interesting new address: c/o Standard Fruit Company, La Ceiba, Honduras—that's a long way from Westport, Conn. . . . **Mort Jenkins**, after living for years in Sewickley, Pa., near Pittsburgh, has moved to 624 Nelson Place, Newport, Ky. 41071. . . . **Col. Laurence A. Stone** now resides at 2034 Columbia Pike, Arlington, Va. 22204. . . . **Kenneth N. Mathes** of the Advanced Technology Labs at General Electric, Schenectady, recently gave a paper before a meeting of the American Chemical Society. . . . Many of you knew or suspected that your secretary has had quite a rough time for the past two or three years. Since this is my last chance, I wanted to give you some of the details and to offer encouragement to others of you who find yourselves out of a steady job at age 50 plus. It happened to me twice in one year. Once when I was forced out of the company I started 12 years earlier, and the second time when the board of the company I went with changed presidents less than six months after I had joined them. It's quite a shock to the system. Anyway, I soon found many companies interested in my services but not at my full-time price. This led me into the consulting field primarily in electromechanical product and market development in the electronic industry. All companies are interested in talking about new products, but if you can offer new products plus sales you have the makings for a deal. I am working with four well-financed, cooperative clients now, and to all those of you who told me last year and the year before "this may be the best thing that ever happened to you" I can now say a most fervent amen. So the world looks bright again and now all I have to worry about is whether my youngest daughter's college graduation is going to conflict with my 50th Reunion 20 years from now. (Think of **Gerry Golden**, his little one won't graduate for two years after that.)

... On a more serious note: these notes mark the end of five years of secretarial effort, five years with nine issues per year, and 1935 had some kind of a column in each of those 45 issues. This was the goal I set when I accepted the nomination and election. You see I was just frustrated enough in finding no 1935 notes in I don't-know-how-many issues of *The Review* prior to our 25th that I was a prime candidate. We elected four regional secretaries to help at that time and then I appointed 30 district secretaries around the country to keep the information coming. This worked well until August, 1963, when I suddenly had no secretary or ditto facilities to send everyone advance copies of the notes by mail. Without that monthly reminder the information thinned out, but there always seemed to be at least one letter to fall back on. The fun has been in receiving long letters from long-silent sources out-of-the-blue and in keeping up with and renewing old acquaintances. I think best of all I have enjoyed the new friends I have made among our classmates. They are fine gentlemen and a delight to be with (even though our senior banquet would seem to have indicated otherwise, and even though hardly any of them ever went near the crew boat-house). Incidentally, my frustration of five years ago has long since turned to sympathetic compassion and understanding of the valiant efforts put forth by my predecessors who tried to carry on without any of the kind of help I had. Won't you each join me in a small promise to write to our new secretary at least once a year; put him on your Christmas card list and enclose a note with it as a minimum? Don't forget. And have a fine summer.—**Allan Q. Mowatt**, Secretary, 61 Beaumont Avenue, Newtonville, Mass. 02160; Regional Secretaries: **Edward A. Edgar**, Kerry Lane, Chappaqua, N.Y.; **Hal L. Bemis**, 510 Avonwood Road, Haverford, Pa.; **Gerald C. Rich**, 105 Pasatiempo Drive, Santa Cruz, Calif.; **Edward J. Collins**, 11 Rockville Park, Boston, Mass. 02119.

'36

Was my face red last month when I realized that the 15th had gone by and I had neglected to write my notes? Well, there always has to be a first time—but I had news, too. One Sunday afternoon in late March as I put my daughter on a plane for Chicago to return to Lawrence University for the last quarter of her senior year I met **Dick Morton** and his wife who were seeing off their daughter and son bound for Carleton College after spring vacation. Dick is professor of physics and associate dean of the faculty at Worcester Polytechnic Institute. The Mortons live in Shrewsbury where Dick has been chairman of the school committee. . . . Last August the bulletin of the American Meteorological Society carried a paper by Sigurder Thorarinsson of the Museum of Natural History, Reykjavik, Iceland, and **Bernard Vonnegut** of Arthur D. Little, Inc., Cambridge, Mass. The paper discussed "Whirlwinds pro-

duced by the eruption of Surtsey Volcano," the volcano which formed an island off the south coast of Iceland. . . . The Michigan Business Review published a paper by **Semon Knudsen** in the fall. It was a talk given a year ago at the Graduate School of Business Administration when he accepted honorary membership in Delta Sigma Pi Fraternity, a professional fraternity of business administration students. . . . The Hartford Courant reports that **John C. Rowell**, Director of engineering for Anaconda Brass Company in Waterbury, has been appointed chairman of the Connecticut State Chamber of Commerce committee on water pollution. . . . In February **C. L. Bouchard** addressed the Western Massachusetts Section of the A.S.M.E. at a joint meeting with the student section at the University of Massachusetts. His subject was "Automobile Engineers of Yesterday, Today and Tomorrow." On January 15th he was appointed executive engineer for engineering planning at the Ford Motor Company.

Gerry McMahon made his annual trip to Boston and over the phone noted that his eldest son, a math major, is doing graduate work and is thoroughly involved with computers and that his second boy is a college freshman. Gerry is superintendent of laboratories for Cities Service—continental in Lake Charles, La. He was north for a meeting of the joint A.S.T.M. and T.A.P.P.I. committee on wax testing. . . . **Dave MacAdam** will deliver the Mattiello Memorial Lecture at the meeting of the Federation of Societies for Paint Technology in Atlantic City in October. Dave is senior research associate in the physics division of Eastman Kodak Company. . . . Another graduate member of the class, **George Bair** of the Corning Glass Works has been elected president-elect of the American Ceramic Society. . . . I regret to report that Colonel **Russell R. Klander** of the Picatinny Arsenal died in December, 1964. . . . The address changes are many: **E. R. Bossange, Jr.**, to Braniff Airways, Inc., P.O. Box 35001, Station 300 B., Love Field, Dallas (75235); **Ben Dayton** reports his zip code in Rochester is 14617; **Dick Fox** is at 210 Lowdale Avenue, Akron, Ohio (44313); **Philip Gordon** has moved across the river to the Delaware River Basin Commission, 25 Scotch Road, Trenton, N.J. 08628; **Mal Graves** would like his mail addressed to 528 Pepper Ridge Road in Stamford, Conn. 06905; **Robert Haynes** to Route 2, Box 115, Winter Haven, Fla. 33882; and **Walt Squires** is back at his old address in Westfield, N.J., after a sojourn in England. Your secretary will spend the summer commuting weekends to Hartland Pond, West Hartland, Conn. (telephone listed under Winsted).—**Alice H. Kimball**, Secretary, 20 Everett Avenue, Winchester, Mass. 01890.

'37

Sidney Levine has recently been promoted to senior staff editor of the *Rock Products Magazine*. . . . **Reino Saloma**

is the associate director of Charles T. Main, Inc., of Boston, Mass. . . . **Nancy Klock** is now teaching electrical engineering at the University of Hartford. She will be an assistant professor at the start of the 1965-66 school year. Her son Stanley, age 25, is an electrical engineer at the Bristol Company in Waterbury; her son Pete, age 21, is graduating from M.I.T. in June and her son Stephen, age 19, is at Arizona State University in his sophomore year. . . . **Ray McFee** left Aerojet-General last October to join the Jet Propulsion Lab, Caltech, as manager of lunar and planetary sciences section. His first granddaughter was born April 5, 1965, to his oldest daughter. . . . **Art Zimmerman** recently presented the Man-of-the-Year award for the Sales-Marketing Executives to Randall M. Ruhlman, Vice-president-secretary of the Cleveland Chamber of Commerce. . . . **Vladimir Haensel** recently received the American Chemical Society Award in industrial and engineering chemistry sponsored by the Esso Research and Engineering Company. . . . **James D. McLean**, former Senior Vice-president of General Dynamics Corporation, has been appointed general manager of Shelby American, Inc. . . . **Ed Herbig**, General Sales Manager of the E. F. Johnson Company, Waseca, Minn., for 13 years, recently resigned his position to retire and Ed says, "to enjoy life and take care of miscellaneous outside interests. Taking the family to Europe for two and a half months this summer." During the 13 years since Herbig assumed charge of the company's sales, they have grown from \$2,600,000 to over \$11,000,000. Herbig came to Waseca in 1952 from Ray-O-Vac, Madison, Wis., where he was director of alkaline cell (battery) development. Previously he had been assistant to the president of Gray Manufacturing Company, Hartford, Conn. In Waseca, Herbig was active in Boy Scout work and served on the Boy Scout Council for a number of years. For the past four or five years he has been active in the United Fund Campaign.—**Robert H. Thorson**, Secretary, 506 Riverside Avenue, Medford, Mass.; **S. Curtis Powell**, Assistant Secretary, Room 5-325, M.I.T., Cambridge, Mass.; **Jerome Salny**, Assistant Secretary, Egbert Hill, Morristown, N.J.

'38

"From the looks of the class notes I would judge that not many of the class have been in touch with you," is a deduction straight from **Paul Black** that I would hesitate to refute! Now that we have a lead into this month's narrative, I must hasten to point out it is a typical—this time we do have a heartening amount of autobiography and primary data. **Paul** continues: "My life has been busy but relatively uneventful. I did get a new assignment last fall, and I am now the division planning manager for the electronic systems division of Sylvania, responsible for operational planning activities within the division. Although I have

not seen any of our classmates in the past six or eight months, I have come across several names in print. **Bob Campbell**, for example, was listed as a discussion leader in the American Management Association seminar concerning business forecasting and planning in the defense industry. Bob is director, technical staff, defense and space group, Burroughs Corporation. I also came across a Rand Corporation report on 'Cost Effectiveness Analysis as a Management Tool,' written by **Chauncey Bell**. Ruth and I attended a performance of the Boston Skating Club's annual production—the Ice Chips of 1965—which included **Don** and **Phyl Severance**. The advancing years (and the responsibilities as anchor man for the association) do not seem to have taken their toll on them! I hope to be seeing a much larger number of old friends on Alumni Day." . . . **Bert Grosselfinger** has never led a dull life, and if you ask to get him on the phone without putting some limits on how far he should be pursued, you may get a whopping bill! February found Bert in Germany for three weeks of intensive business. In early March he headed back for New York via leisurely sojourns of one week each in the Canary Islands and Puerto Rico. Easter Week found Bert in Acapulco which we understand he recommends as "most enjoyable!" We lost track of him the following week when he appeared in Managua, Nicaragua on business! Any resemblance between such a life and foot-loose and fancy-free is purely coincidental.

Vernon Lippitt has been covering the U.S. front, interviewing some 25 companies to learn how they do their sales forecasting. Vernon as professor of business administration here at the University of Rochester, is gathering material for a book that he has in preparation for the Financial Executives Research Foundation. . . . As respite from the complexities of modern metallurgy, **Bernie Lement** has long specialized in a two-phase system. He is tournament director of Belmont Tennis Club, and reports, "After my third year of participation in New England Lawn Tennis Association tournaments, I finally got a ranking of number 19!" (Bernie notes that he plays in the senior division, "45 and over" but has nothing to say about how he got the waiver on minimum age.) "My game is still improving and I hope to do even better this season. I also have been playing in chess tournaments this winter, and expect to retain my rating as a Class A player in the U.S. Chess Federation." . . . **Lester Kornblith** joined the Atomic Energy Commission over a year ago, and left California to move to Washington. Les was formerly manager, reactor technical operation for General Electric's Vallecitos Atomic Laboratory. Now with the A.E.C. he is assistant director of the division of compliance. (Isn't it peculiar in our language that this title could equally well signify a division devoted to flexibility, or one whose internal letter-head says, ". . . or else!")

In order to bring a little more camaraderie into the circle at Pound-Laundry, **J. J. Phillips** reports, "I have just organ-

ized a Washington M.I.T. Downtown Luncheon Group for the purpose of fostering good relations between M.I.T. people in the area—and to serve as a forum for discussion of issues involving technology and national policy. Philip Abelson, editor of Science, discussed the 'Martian Environment' at our first meeting; Rollin Gillespie presented 'Mars As A National Goal' at our second." **J. J.**—nearly everyone gets to Washington from time to time—how do we connect with your luncheon group? . . . **Jack Phinney**, in a brief little note from the Consolidation Coal Company environs of Pittsburgh, claims that news from the class is the most interesting thing he has encountered recently. Flattery, Jack, will get you everything! . . . "Sporting a bow tie, a crewcut, and the hint of a smile . . ." begins one of our news releases! Unusual in style it certainly is—but even more unusual because we knew who the man must be before they ever got to the name. "**Richard G. Vincens**," the release continues, "looks ready, willing, and able to tackle his new assignment as group coordinator of southern plant operations for Sunbeam Corporation, Chicago. Formerly production control manager for the John Oster Manufacturing Company, a Sunbeam subsidiary, he previously had served as order and contract manager for American Bosch Arma Corporation. Recently he was elected 1964-65 president of the American Production and Inventory Control Society."

Colonel **Sam Steere** has assumed the position of deputy commander for materiel for the 325th Fighter Interceptor Wing at McChord A.F.B., Washington. His most recent assignment was Stewart A.F.B., New York. Sam's new unit supports the Air Defense Command mission of defending the continental U.S. against enemy air attack. . . . **Eric Reissner**, the only member of our class on the staff of the Department of Mathematics at M.I.T., received an honorary doctor of engineering degree from Hanover Institute of Technology "in recognition of pioneering work in the field of elastomechanics." Eric presented one of two American keynote addresses at the Eleventh International Congress of Applied Mechanics in Munich last September (on the subject, "Foundation of Shell Theory." And just to complete the bon vivant image, Eric says, "Mrs. Reissner and I have just been notified by the Massachusetts Horticultural Society that we have been awarded their Albert C. Burrage Porch Prize for excellence in landscaping and gardening!" . . . **Alfred Kilgour** was cited by the I.E.E.E. North Carolina Bulletin for his work on high voltage power transmission. Associated with Aliss-Chalmers since 1942, Al has served as engineer-in-charge of the extra high voltage direct current test facility for Bonneville Power Administration; he has also participated in the development and application of electrical equipment for the Stellarator Project at Princeton, and has several papers on switching of high-power circuits.

Ralph Adams has received the Bendix Corporation's diamond emblem in recognition of 25 years service. Ralph is chief

engineer of the Red Bank Division. . . . **Norm Leventhal** announced that his company, Beacon Construction Company, is moving ahead with phase two of the Boston Redevelopment Authority's Government Center—one year ahead of schedule! Phase one of the building extends along Cambridge Street from Somerset Street half-way to Pemberton Square; phase two will complete the building to Pemberton Square, and its start follows the early topping-off of phase one. . . . **David Geer**, head of Geer Associates in Bloomfield Hills, Mich., received the First Honor Award from the Urban Renewal Administration. Dave's firm is planning Clemens Homes—developed with the assistance of the Public Housing Administration. They are currently working on urban renewal planning for Jackson, Pontiac, Mt. Clemens, Clawson, and Muskegon Heights—all of Michigan. . . . **Lawrence Hofstein** has been appointed an assistant technical director of Walter Kidde and Company, in a newly created post. Lawrence was previously technical consultant for American Machine and Foundry's advanced products group. He held technical responsibility for several rocket programs, and evaluated pump and compressor development programs.

Colonel **Will Roper**, district engineer U.S.A. Engineer Corps District, Louisville, Ky., discussed completed plans for the Buck Creek Dam project before the Rotary Club of Springfield, Ohio. Will's military service of more than 20 years has included engineer assignments on both civil and military projects in the U.S. and abroad, as well as combat commands. He has also had staff assignments in the office of the Chief of Engineers at U.S. Air Force Headquarters, and at SHAPE. . . . **Al Wilson** is currently moderator of the Massachusetts Conference of the United Church of Christ. Typical of the many responsibilities this engenders was his featured presentation to the Wellesley Open Church Group, "The Relevant Bible." Al has been copropriator of the American Board of Commissioners for Foreign Missions of the Congregational Church, trustee of the Andover Newton Theological School, chairman of the Department of Finance of the Massachusetts Council of Churches, and director of the American Leprosy Missions, Inc. . . . **Ben Siegel** is program director for the development of an improved electron microscope to operate at the theoretical limit of resolution of 8×10^{-9} inches. Ben established the Laboratory of Electron Microscopy at Cornell in 1949, and his group has now been awarded a U.S. Public Health Service grant for the development of an electron microscope that will be functional to this limit. . . . Sadly we note the death of **Herbert Leaderman**, who received his Ph.D. with us. Herb retired early from the National Bureau of Standards because of illness. He was noted for his pioneering work in rheology and polymer physics: a recipient of the Bingham Medal of the Society of Rheology and the Silver Medal of the Department of Commerce. . . . This column brings us to the start of the long and the short

sabbaticals! Happy summer to you all, and be sure to write if you get work!—**Frederick J. Kolb, Jr.**, Secretary, 211 Oakridge Drive, Rochester 17, N.Y.

'39

James H. Ferry, VI-C, has recently been elected to the board of directors of the Gary-Wheaton Bank, of Wheaton, Ill. Jim is also a director of Continental Motors, in Muskegon, Mich., and as a sideline is president of Aspen Airways, an airline for skiers which operates as a shuttle service between Denver and Aspen. . . . The New York Times carried news on April 18, of the engagement of Gretchen Hunicke, daughter of **August B. Hunicke**, II, and Priscilla. Gus and Prilla live in Old Saybrook, Conn., where Gus founded his own company in 1963: Precision Timer Company, engaged in the development, design, and manufacture of electromechanical and electronic timing devices and sub-horsepower motors. . . . **Hugh F. Kennison**, I, completed 25 years of service with Lock Joint Pipe Company, now a part of the pipe division, International Pipe and Ceramics Corporation, East Orange, N.J. Hugh is vice-president and general manager of the division. He is also on the board of directors of the merged company, formed by the combining of Lock Joint and Gladding-McBean and Company, into International Pipe and Ceramics, currently referred to as "Interpace," which supplies services and products for water supply, industrial processes and building industries. . . . **Thomas J. Reading**, I-Grad, is a new member of the board of directors of the American Concrete Institute, headquartered in Detroit. Mr. Reading, a 1936 graduate of Ohio University who received his master's with the class of '39, is chief materials engineer for the Missouri River Division of the U.S. Army Corps of Engineers, Omaha, Neb. He has been with the Corps' Missouri River Division since 1953, working on design and construction aspects of concrete and other materials used in civil and military construction.

Thacher H. Fisk, IX-B, has been elected a vice-president of the Kendall Company, Boston. He is also Kendall's general counsel. In addition to his Kendall activities, Thacher is a director of Eberhard Faber, Inc., a former director and past president of the U. S. Trademark Association, and a trustee and clerk of the Natick Five Cents Savings Bank. . . . **Theodore P. Snow** will represent the Institute at the inauguration of Richard Morrison as fifth president of Alabama Agricultural and Mechanical College. Ted is Boeing's manager of the Huntsville Office, which is the location of NASA Space Flight Center and U. S. Army Missile Command. Ted has been with Boeing since graduation, first in Seattle in industrial relations, industrial engineering, and engineering administration. In 1951 he moved to Dayton as a Boeing representative, and in 1961 he relocated to Huntsville as the Boeing manager there. . . .

Thanks to **Manning C. Morrill**, X, who sent along a clipping from the Wall Street Journal of May 13. Here's another promotion: **Harlow J. Reed**, XIV, was appointed executive vice-president, metals, responsible for aluminum and brass operations and the Winchester-Western division of Olin Mathieson Chemical Corporation, New York City.—**Oswald Stewart**, Secretary, 3395 Green Meadow Circle, Bethlehem, Pa. 18017.

'40

By the time you read this column, our 25th Reunion will be a happy memory. However, it is still not too late to make your contribution for our 25th Reunion Gift since the Institute has agreed to include all contributions through December 31, 1965, as part of the 25th Reunion Gift. . . . It is with regret that I must report the death of **Sohl Sparer** on February 1, 1965. Sohl was a member of our Class in Courses VI and VII for our first year and the first term of our second year. . . . **Bob Millar** is the new president of Warner Lewis Company, subsidiary of Fram Corporation. Bob had been acting general manager of Warner Lewis since July, 1964. . . . **Frank Chesley** has been appointed to the State College Board in Minnesota. The board governs the five State colleges. He is also head of the Central Research Laboratories in Redwing, Minn. . . . **Harry Sedgwick** has formed Design Management Consultants in Weston, Mass. This new firm is devoted to analysis of the engineering function in industry and establishment of suitable management controls to insure overall efficiency. Previously, he was consultant to the vice-president of engineering and research at Raytheon Company.—**Alvin Gutttag**, Secretary, Cushman, Darby and Cushman, American Security Building, Washington 5, D.C.; **Samuel A. Goldblith**, Assistant Secretary, Department of Food Technology, M.I.T., Cambridge, Mass.

'41

Leonard Katz has been appointed by the President's Science Advisory Committee to serve on its subpanel for solid wastes. The gross national product eventually ends up as waste material. Solid wastes include all solid material that ends up, from mining operations, in the junk yard, in lots, at the end of dead-end street, and even abandoned cars left on the cities' streets. Mining and industrial waste piles have been increasing steadily, and as the world's population continues to grow, this material will require larger proportions of much needed land area and will in some cases even be toxic to humans. Leonard is hopeful that his forthcoming analysis of the problems surrounding our country's solid wastes will have a relatively simple answer and one that will further improve our own eco-

nomic outlook. Leonard is currently president of Astro Dynamics, Inc., of Burlington, Mass., which he formed after leaving his full-time consulting business, the Woburn Engineering Company of Woburn, Mass. Prior to that he was engaged in development work with the Raytheon Manufacturing Company, Waltham, Mass. During World War II he participated in a combat mission in which television was used to guide bombs to their targets. Besides M.I.T., he is a graduate of the Technical Hogeschool in Holland. On a previous governmental assignment, he spent some time in Pakistan observing land areas laid waste by salts.

Franklyn W. Phillips, Assistant Director for Administration of the Electronics Research Center, Cambridge, Mass., was key speaker at the Wellesley Junior Chamber of Commerce Distinguished Service Award Banquet held at the Wellesley Country Club in March. . . . **Frank S. Wyle**, President of Wyle Laboratories, was presented an award by the publisher of the Instrument Society of America Journal for introducing an outstanding example of instrument innovation at the 19th Annual Instrument Society of America Conference and Exhibit in New York. The innovation exhibited was a low-cost arithmetic processor, which, according to the I.S.A. Journal, "provides for the first time an economically feasible computer for a single control loop or small instrumentation system." The arithmetic processor is an outgrowth of the Wyle Scientific electronic calculator.—**Walter J. Kreske**, Secretary, 53 State Street, Boston, Mass.; **Henry Avery**, Assistant Secretary, 169 Mohawk Drive, Pittsburgh, Pa.; **Everett R. Ackerson**, Assistant Secretary, 16 Vernon Street, South Braintree, Mass.

'42

Bill Bolhofer has been named to the newly created post of senior research fellow in the department of medicinal chemistry at Merck Sharp and Dohme Laboratories. He has been with the company since graduation from the Institute with one time out to return to the Institute for his Ph.D. his most recent scientific contributions have resulted in the development of new treatments for ulcers and arterial diseases. . . . **Dick Andrews** has been appointed general manager of Sicard, Inc., Toronto, Canada. He has been with Sicard since 1951. . . . The American Modeler describes the interesting career of **Jay Brandon**, who over a year ago purchased Dumas Boats, a company that makes small model boats and kits. Jay has been employed by Western Electric, Pratt and Whitney, and, most recently, as vice-president of Magnetics, Inc. Some of his boats are motorized with radio controls and sound like a real opportunity for some of us with young boys to start one of these joint projects with our sons. These are the kind, you know, where you go with your son to the store to buy the model for him to build and then put him in a chair

in the corner of the room and proceed to build it yourself. . . . I had a note that **S. Young Tyree, Jr.**, who is a professor of chemistry at the University of North Carolina, delivered the annual Phi Beta Kappa address at Washington and Lee University. . . . **Monroe Brown** dropped me a note to let me know he is now assistant to the president of Kollsman Instrument Corporation, the president of which is another distinguished member of the class, **Dave Nicholson**. **Monroe** reports his new address as: 220 East 54th Street, New York, and suggests that members of the class contact him when they are in New York City. . . . Finally, I must end on a sad note by reporting the death of **Leon Flanders**, who died, according to my information, about a year ago. Unfortunately, I have not been able to find any amplifying information, but if a classmate from Norwalk, Conn., which is where **Leon** lived, I believe, could give me some details, I shall certainly pass them on to the class.—**John W. Sheetz**, Secretary, Harvard Business School, Soldiers Field, Boston, Mass. 02163.

'44

After a review of my extensive filing system, this month's notes appear to take form. . . . First, an article by **Mario Banus, V**, on "Alpha-Beta Transition Temperature in Silver Selenide." The article appeared in *Science*, and does indicate that **Mario** has gone on to a Ph.D., and is now associated with Lincoln Laboratory. . . . A note and picture arrived on the appointment of **Joe Kaufman, II**, to the board of governors of the American Stock Exchange. I have not had an opportunity to call **Joe** up, but shall try to do so during the summer and report next fall. . . . A squib in the *Journal of Occupational Medicine* announces the appointment of **Edward Radford, VII**, as head of the University of Cincinnati's Deterring Laboratory next September. **Ed** has majored in the medical field since leaving the Institute, and has most recently been a physiologist at the Harvard School of Public Health. . . . Last week I had lunch with **Tom Carmody, X**, and **Dave Jealous, II**, at the suggestion of **Tom**. Upon arriving at **Tom's** office, I discovered that he had broken an ankle skiing, and was still learning the intricacies of crutches. **Dave**, who had been skiing with **Tom** back during Institute days, had many helpful words of counsel, as **Dave** broke his ankle some time ago, and had also learned the intricacies of crutches. I can report that **Tom** was doing very well, as he needed little help in going through revolving doors!

United Aircraft Corporation has announced the award of The George Mead Gold Medal for engineering achievement to **John Chamberlain, XVI**, for development of a new transpirational cooling technique for rocket engines with high combustion chamber pressures. **John** has been working at the Pratt and Whitney

Aircraft Center in Florida on a number of advanced rocket projects. . . . **George De Voe, XIII**, has been devoting his time to the sale of insurance and real estate in the New Milford, Conn., area. He has in addition been writing articles, and a recent one was sent to me on the Development of Personal Lines Sales. The text of the article points out the requirement for continued development of the independent agent to do a better job for his customers. . . . A note which has been in the files a bit longer than is customary advises that **Bob Almeida, X**, has been very active in the town government of Wakefield, Mass., most recently being elected chairman of the finance committee of the town. **Bob** who commutes daily into Cambridge is business manager of the R & D division of Arthur D. Little Associates. The article goes on to report that the **Almeidas** have three children, **Bruce**, **Jane** and **John**. . . . Another note which got mixed up in the file, advised of the calling of **Robert L. Meier, III**, as minister of the Danvers Congregational Church from the Stanley Congregational Church in Chatham, Mass. **Bob**, who served in the Army, and then worked at United Aircraft, finished his theological training at the Hartford Theological Seminary in 1953, and was ordained in Stratford, Conn.

The last item in the file is an article written by your secretary which appeared in *Electric Light and Power* in April on the subject of using copper wire for Underground Residential Distribution. I will be happy to forward reprints if you missed the original. Also, in looking over the past notes, I find that I have held this post for about six years. I wonder if in the audience there is anyone who would like to take over the duty of Secretary? Even if you aren't interested in taking over the job, are there any comments you would like to make about the monthly column? —**Paul M. Heilman**, Secretary, 30 Ellery Lane, Westport, Conn.

'46

Received a long and newsy letter from a temporarily hospitalized (nothing serious) **Bob Nelson**. A year or so ago **Bob** left New England to go to work in Washington for the U.S. Navy Scientific and Technical Intelligence Center. Because of his job, and also in connection with his Naval Reserve duty (**Bob** has just been selected for promotion to commander) he has been to school at Pt. Magu, Lowry Air Force Base in Denver, and has witnessed the firing at sea of an A-3 Polaris missile, as well as the pad explosion of an Atlas Centaur. **Bob** and **Marianne** have four children, **Tony**, 10, **Astrid**, 8, **Sarah**, 5, and **Tommy**, 3. They make their home at 2001 Stratton Drive, Potomac Woods, Rockville, Md. 20854. . . . **Allan Bralove**, whose appointment as executive vice-president of Documentation Incorporated was recently reported, has just been elected to the board of directors of that Bethesda Maryland firm. . . . **Mar-**

shall Tulin, Vice-president of Hydronautics, Inc., chaired a recent M.I.T. seminar on "Turbulence in Viscoelastic Fluids." . . . **J. Herbert Hollomon**, assistant secretary of commerce for science and technology, spoke on "Technology and Industrial Development" at a recent meeting of the Grand Rapids, Mich., Chamber of Commerce. . . . Before closing out this publication year, we have a few address changes to report. Without moving a — inch (expurgated "Bert and I") **Dave Moyer's** street name is changing to 6317 Beechway Drive, Falls Church, Va. Other new addresses are **Hans A. Lieske**, 16151 Anoka Drive, Pacific Palisades, Calif.; **John H. Fleming**, 21635 Standing Rock Avenue, Apple Valley, Calif.; **Martin T. Dyke**, 107 Larned Road, Summit, N.J.; and **Bennett Brooks**, Metal and Thermit Corporation, 100 Park Avenue, New York, N.Y. . . . I have one personal item to report. Despite my efforts to sell M.I.T., my daughter **Cary** has chosen Wellesley and will enter that school next fall. Other proud but impoverished parents are invited to write us concerning their offspring, and themselves. Please do. Our literary larder is bare.—**John A. Maynard**, Secretary, 25 Pheasant Lane, North Oaks, St. Paul, Minn. 55110.

'48

Several of our illustrious and apparently footloose classmates met in New York, March 30, for an informal dinner party which allowed the transaction of a bit of alumni business under rather pleasant circumstances. Among those attending: **Carleton Boll**, **Ken Brock**, **Dave Cist**, **Harry Jones**, **Bob Mott**, **Bill Bangser**, **Ben Brettler**, **Em Callahan**, **Bill Maley**, **Bill Grant**, **Leon Brettler**, **Ken Parmelee**, and **Tom Folger**. . . . The following of our classmates are chairmen of their regions of Alumni Fund solicitation this year and as such will be giving substantially of their time (at least) to aid the Institute: **Bertin Posthill**, **Peter C. Hand**, **Benjamin Brettler**, **Perry Nies**, **Robert Sandman**, **Harold Field**, **Donald Levenson**, **Arnold Singer**, **James Rattray**, and **John Fitzpatrick**. . . . **Thomas H. Anderson** has been awarded an Alfred P. Sloan Fellowship, for a full year for education in management at M.I.T. The Sloan Fellowships are granted to outstanding young business and government executives both in the United States and abroad and are considered among the highest honors which can come to young men during their management careers. Back to the old grind **Andy**? . . . **Raymond F. Rogers** was elected a vice-president of the Polymer Corporation, and will be responsible for all financial and accounting matters of the Polymer Corporation and its subsidiaries. He lives with his wife **Dorothy** and three children in Wyomissing, Pa. . . . **Robert Shoulberg**, of Rohm and Haas Company, the Philadelphia plastics and chemical manufacturer, has been promoted to head of one

of the plastics applications laboratories at the firm's research laboratories at Bristol, Pa. Rohm and Haas makes, among other things, plexiglas.

Russell A. Gwillim has been named executive vice-president of Chicago Rawhide. He has been with the company since graduation, starting as a sales engineer, and has successively held the posts of general sales manager and vice-president in charge of marketing. . . . **Richard O. McManus** is a technical director for the Deputy for Command Systems at Hanscom Field. He recently received a certificate for 20 years' government service at Air Force Electronic Systems Division. . . . **Cornelius L. Hudak** has been appointed executive vice-president at Plume and Atwood Brass and Copper Corporation, Thomaston, Conn. . . . **Ionics, Inc.**, has at least two vice-presidents from '48: **Thomas A. Kirkham**, equipment division, and **William E. Katz**, sales. Ionics has pioneered the use of electrodialysis for water conversion, and for food and chemical processing. . . . The news this month seems to be dominated by vice-presidents and for those who are interested in corporate matters it is noted that at least two of our new vice-presidents had the acumen to be members of the boards which elected them to their posts. Perhaps there is a message here for someone—**Richard V. Baum**, Assistant Secretary, 1718 E. Rancho Drive, Phoenix, Ariz.; **John T. Reid**, Assistant Secretary, 80 Renshaw Avenue, East Orange, N.J.; **Robert R. Mott**, Secretary, Kent School, Kent, Conn.

'49

Most of you, I am sure, have gardeners, even head gardeners, and a crew to keep your estates tidy and free of dandelions. But here at Dandelion Acres, the head gardener just sat down to type these notes and not only do his bones ache from stooping but dandelions float before his eyes. You won't believe this but to top it all off, we even had a little Pennsylvania Dutch delicacy for dinner today call scalded dandelions with hot bacon dressing. I'll never ever stand for hearing tobacco called a noxious weed again. I have my own candidate. . . . Here are three more sturdy souls who braved the rigors of the Cape to attend our 15th Reunion (over a year ago as you read this). **Malcolm Kurth** and wife Doris hail from Pittsfield, Mass., where he works as a program manager for General Electric. He has moved five times since graduation but has worked for the one company all that time. He can do ten push-ups despite adding 40 pounds and keeps himself in trim through bowling and golf. He and Doris were Lodge Republicans at the time of the questionnaire. Malcolm travels 80,000 miles a year in his job. He is active in community affairs and has been (or may still be) chief of the volunteer fire department. Possibly this last job is why he gave up smoking. Doris didn't. . . . **Bruce Campbell** and wife Marilyn live in Marblehead,

Mass., with their children Bobby (age 7 now) and Leslie Ann (age 5 now) plus one more who hadn't arrived at the time of the reunion. Bruce is executive vice-president of the Massachusetts Safety Council and a partner in Bruce Campbell and Associates. He keeps up in his field by membership on many committees and by constant study. All this activity plus, golf, sailing, and skiing has held his weight gain to five pounds since graduation. He can do 15 pushups. Bruce was a Liberal (Lodge) republican last time around. (49.9 percent liberal and 50.1 percent republican, it says here.) So was Marilyn. Bruce never started smoking. Marilyn has quit. They wouldn't send their children to M.I.T. "It's too much like a factory, too close to home. Prefer a smaller college."

If there was one man we won't forget soon it was that bachelor **Tom Tsotsi**. He is single. Tom, you may recall, won the John Profumo Medal at the reunion because he least deserved it. To crown the indignity, he received the very pair of black unmentionables which he, as purchasing agent for the reunion, had conned his sister into buying as the prize that went with the misconduct medal. Anyway, this searing memory is no doubt somewhat faded in Tom's mind by now and he is busily plying his trade as a structural engineer for C. A. Maguire Associates in Boston. Since Tom claimed the largest number of pushups on his questionnaire he was called upon by the committee to demonstrate at the Saturday night banquet—and after the meal at that. Whereupon Tom performed the number claimed (25 to 30) just like that and wasn't even puffing when he came up for air. Tom is a registered republican but not a Goldwater man. Conceded 1964 to the democrats and L.B.J.—"hopeless for our side."

The following letter arrived last week. It speaks too eloquently to require comment: "Dear Mr. Eaton: Yesterday (May 5) I received the May, 1965, issue of the Technology Review and noticed at the end of the 1949 class news that you regretted the absence of other details about the death on July 16, 1964, of my friend **André P. Viret**. I can supply a few details. Andy's widow's name is Regine and she lives at 387 Prospect Street, Ridgewood, N.J. He also left three boys, Mark, eight, Jacques, six, and Laurence, four. Andy worked for the Bendix Corporation since his graduation in 1949. Shortly after his graduation he became aware that he had Hodgkins Disease and fought it for 15 years until he died. If I may be permitted a word of tribute, I would say that Andy spoke of his illness in much the same manner as a person would complain about a hangnail. Andy was in Course VIII. Yours Truly, Francis X. Hogan, '50."—**Fletcher Eaton**, 42 Perry Drive, Needham, Mass. 02192.

'50

I hope you all got to and enjoyed our 15th-year Reunion at the Cape. There is something of great value and personal

satisfaction in maintaining active ties with M.I.T. and classmates. After 15 years of absence from the great campus we start losing the feel of those days when we were grinding our way through the Institute and we hardly realize its penetrating impact and influence on our way of life. I have spent the last 10 years of my life on the problem of improving the educational process in the management field and I can tell you that what Tech has done to the engineering profession needs to be done to the management profession and probably to all the other key fields of education. So let's stay active with Tech. See you at our 20th Reunion. . . . Here are some notes that have come across my desk. (Please let me hear from you) . . . **Eugene T. Comeau** has been appointed manager for the process engineering department of Monsanto Company's agricultural division, as technical service superintendent at the division's Muscatine plant. . . . **Allen W. Shaw** is an aeronautical engineer employed by Link-Temco-Vought of Grand Prairie, Dallas, Texas, where he played a part in designing one of the most interesting aircraft developments to take place—the vertical takeoff and landing plane. The aircraft is capable of speed in excess of 430 miles per hour. Allen lives at 2021 Mill Creek Drive, Arlington, Texas, with his wife and two children. . . . **John F. Brown, Jr.**, is the new manager of biological investigations at the General Electric Research Laboratory, Schenectady, N.Y.

William Keefe, a Director and Financial Vice-president of Warner Electric Brake, South Beloit, has also been named a director of West-tool, Ltd., the Warner licensee in England. He was a financial executive with U.S. Steel before joining Warner Electric in 1957. Bill has also been a consultant with A. T. Kearney and Company, a national management consulting firm. . . . Major General **Gordon T. Gould, Jr.**, Deputy Commander of the Air Force Communications Service has been awarded a Legion of Merit (Second Oak Leaf Cluster). The award recognizes General Gould's outstanding service as chief of communications—electronics division in the directorate of operations at Strategic Air Command Headquarters. He lives in Glen Ridge, N.J., with his wife and three children. . . . Best regards to all.—**Gabriel N. Stilian**, Secretary, St. Clair and Welch, Inc., 10 East 40th Street, New York, N.Y.

'51

The names of certain of our classmates appear in the news fairly regularly but not for reasons of describing their own activities. Consequently we know where they are but not much else. I tried to remedy this but found them not only busy, but also elusive. I did, however, manage to nail a few of them. . . . Our class president, **Hank Spaulding**, is now executive vice-president of Cabot, Cabot and Forbes and is in charge of their na-

tional construction and development operation. Although he spends a lot of time traveling around the country, he has found time to delve into horticulture and in fact has fixed up a very attractive conservatory at his home in Lexington, Mass. He and Ann (Emerson) have four boys ranging from Bob, nine, to Jack, three, a girl, Jean, one, they have adopted a 3-year-old Korean girl (Sue Choi), and the last report was—you guessed it—around early fall. . . . **Fred Lehmann**, illustrious secretary of the M.I.T. Alumni Association, is living in Boxford, Mass., with Betty Ann (Ferguson) '53 (to whom he is married), and as Fred relates it: "Karl, Pamela, Karen, and Andrew—Karl is the oldest, about seven, and that's all I can remember." The Lehmanns enjoy camping and spent four weeks last summer without seeing the inside of a building. . . . Our reunion chairman, **Fred Aldrich**, is chief engineer for New England Instrument Company in Natick, Mass. (Their principal product is conductive plastic potentiometers.) Fred and Jan (McMahon) sandwiched in a girl, Claire, eight, between their two boys: Bryan, ten, and Eric, five. Their favorite warm weather pastime is boating; they have a 30-foot, twin screw cabin cruiser. Maybe they'll offer boat rides to those who come to the reunion. . . . **Gerry Burns** is still with G.E. in Cincinnati but has recently been promoted to a new position in their large jet engine division. Gerry, Betty, and their two children (Gerald, Jr. and Adrienne, about three years, and five months respectively) live in the Walnut Hills area of Cincinnati. Gerry has been very active in Alumni affairs in his area and has achieved sufficient stature to become a member of the nominating committee for next year's M.I.T. Club officers in Cincinnati. The Burnses promise faithfully to come to the 15th next year.

Dick Willard is leaving the M.I.T. admissions office after 13 years to serve as president of Hews, Holz, and Willard, Inc. Their specialty: school scheduling by computer. Dick and Gail are living in Winchester, Mass., and there were four youngsters the last time that I counted. . . . A number of our class have been active in the 1965 Alumni Fund regional solicitation program. Aside from the many who have volunteered to be vice-chairmen and solicitors, the following have been named chairmen of their respective regions: Ed Bronstien in St. Paul; Ed Finnegan in Allentown, Pa.; Bob Hunter has two regions—Pittsfield and North Adams, Mass.; Howard Livingston has Lexington, Mass.; Dick Reuther, Swarthmore, Pa.; Irv Safier, Norristown, Pa.; Bill Shenkle, Penn Hills, Pa.; Paul Smith, Caldwell, N.J.; and Dick Towill in Honolulu, Hawaii. All of these regions, as of early May, were showing 60 to 70 per cent participation which was well above the Institute average. . . . I really shouldn't go on much further without mentioning that **Charles Miller** was selected as one of the outstanding young men in greater Boston by the Boston Junior Chamber of Commerce. Charles and Roberta are also Lexington, Mass., dwellers, and they have

four sons. I guess that you all know that he is the head of the civil engineering department at Tech and is very well known for introducing computer methods to civil engineering. . . . **Howie Schwartzman** is now with the engineering division of Procter and Gamble in Cincinnati. . . . **Bob Butters** was recently promoted to heavy industries planning manager at Industrial Nucleonics in Columbus, Ohio. The Butters just added child number five. Bob was chairman for the special gifts solicitation in his region which, under his direction, exceeded their dollar goal. . . . **John Magee** just published a series of articles in the Harvard Business Review on a concept which he describes as the "decision tree." John has described this as a process for analyzing the choices, risks, objectives, monetary gains and information needs involved in an investment problem such as new plant construction, new business venture, etc. . . . **Harold Rich** is vice-president, research and development, at Sara Lee Kitchens in Deerfield, Ill. Harold has been with Sara Lee since 1962; prior to that he was with Arthur D. Little. . . . **Christian Rust** has been promoted to research director in the research and analysis division of Booz, Allen Applied Research, Inc., in Bethesda, Md. . . . **Joseph Tamsky**, who received his master's degree in architecture with our class, is town planning director of Manchester, Conn., and seems to be a strong force in trying to make the city attractive to industry; strong enough in fact, that the headline in the article was: "Contrary to warnings of local industrialists, town planning director. . . ." Joe lives in West Hartford and has three boys and a girl. . . . **L. R. Young** recently co-authored a paper for the I.E.E.E. on "Adaptive Dynamic Response Characteristics of the Human Operator in Simple Manual Control." The work was performed while he was with Bolt, Beranek, and Newman, Inc.; he is now with M.I.T.'s department of aeronautics and astronautics.

I bumped into **Fitz Winslow** at an A.I.M.E. meeting some time ago and found that he received his Ph.D. from Carnegie Tech, went to Battelle for a while, and is now at Oak Ridge where he has become somewhat of an authority on diffusion. . . . Several additional graduate student members of our class have made the news. **William Gorham** has been named assistant director of polymers research and development at the Union Carbide Research Center in Bound Brook, N.J. The Gorhams have four children and live in Berkeley Heights, N.J. . . . **Nicholas Teukushnan** formed an architectural firm in partnership with a classmate of his from Ohio State. Their firm has received the contract to design Cleveland's newest hotel, the six and a half million dollar Hollenden House. Nicholas and Virginia live in Cleveland with their two sons. . . . **Walter Massey**, well, I had better quote this one: "Walter Massey, actor, director and lecturer, has been named adjudicator for the British Columbia Regional competition in the Dominion Drama Festival. He has run up more than 500 productions in Canada and the United States

during the short periods of 10 years that he has been in the theater." The number of awards that he has received is truly too extensive to list in this column. . . . And my final notes for this season: **Jim Dwyer**, with Millipore Filter Corporation, and **Bob Schiesser** of the M.I.T. Instrumentation lab, presented a series of talks on clean rooms before the Product Engineering and Production Group of the I.E.E.E. in Boston. . . . To all of you, have a happy summer, please drop a line or two, if not about your own activities about those of our classmates that you may have bumped into; and don't forget that 1966 is the year of the 15th.—**Howard L. Livingston**, Secretary-Treasurer, 358 Emerson Road, Lexington, Mass. 02173; **Forest Monkman**, Assistant-Secretary-Treasurer, 108 Park Avenue, Larchmont, N.Y.

'53

Now that Alumni Day has rolled around, we would like to make mention of some our classmates who are giving substantially of their time for regional solicitations for the Fund. These are Gil Gardner, Marion Manderson, Bob Godfrey, Bob Veo, Elmo Pacini, Everett Davis, Vince Bronson, and Jay Berlove (our favorite newly-wed). . . . Your return of the recent questionnaire has yielded some newsy notes. . . . **William Rice**, X, is living in Rockville, Md., with his wife, Joan, and three other dependents. Bill is involved in the technical administration of research and development on reactor fuels and materials with the A.E.C. He is co-ordinator of the U.S.-U.K. plutonium exchanges. Bill received an M.S. in nuclear engineering from the U.S.A.F. Institute of Technology. . . . **Charles A. Homsy**, XB, is now with the plastics department of Du Pont, living in Houston with his wife, Ann, and children, Paul and Allan. Chuck is responsible for the sale of teflon resins in the Southwest. After receiving his Sc.D. at Tech, he was granted a Fulbright Award in 1957 for a year of work at the University of Sheffield in England. . . . **Charles A. Brown, Jr.**, II, is president of Brown Convertibles, Inc., a furniture manufacturer, in Louisville, Ky., where he lives with his wife and child. . . . **Phillip Bianchi**, XVA, is living in Cambridge with two dependents and involved in economic analysis—capital budgeting, acquisition studies, etc., for United Shoe Machinery Corporation, Phil is an M.B.A. candidate at Northeastern Graduate School of Business. . . . **E. Fred Brecher**, XVII, remains an associate in the consulting structural engineering firm of David Bloom, Inc. Fred and Sandra are expecting number three. . . . **Mark S. Tobin**, Bio., is living in Brooklyn with his wife, Rieva, and their two children. Mark received his M.D. from Tufts Medical School and is now on the faculty of New York Medical College where he is involved in both clinical work and research in medicine. He is a diplomate of the American Board of Internal Medicine.

The following address changes have been recorded by the Alumni Office: **Charles D. Buntschuh**, 2 Ten acre Drive, Bedford, Mass.; **Robert W. Chapman**, 3016 Stony Brook, Bowie, Md.; **Richard J. Crowell**, 24 Brewster Place, Trumbull, Conn.; **Norman Doelling**, 6 Turning Mill Road, Lexington, Mass.; **Norman A. Frigerio**, Argonne National Lab., Lemont, Ill.; **Justus C. Gilfillan, Jr.**, 61 Wales Street, Thousand Oaks, Calif.; **Howard D. C. Hill**, 1018 Graylyn Road, Graylyn Court, Wilmington, Del.; **John F. Horn- ing**, 18953 San Jose Street, Northridge, Calif.; **Samuel W. Ing, Jr.**, 4487 Whetstone Road, Manlius, N.Y.; **Herbert T. Landow**, 11212 West 74th Street, La Grange, Ill.; **Jack K. Lennard**, 7 Woodmere Road, Framingham, Mass.; **Josef Liebermann**, 586 Coles Mill Road, Had- donfield, N.J.; **George T. Marcou**, 3530 Quesada Street N.W., Washington, D.C.; **Richard T. Miskinis**, 64 Donna Avenue, Pittsfield, Mass.; **Mrs. Joan F. Mizer**, 9303 Bintliff Drive, Houston, Texas; **Richard K. Neller, Jr.**, 603 So. Quincy Street, Green Bay, Wis.; **Bernard H. Paiewon- sky**, 7533 Spring Lake Drive, Bethesda, Md.; **Luis A. Peralta**, 59 Miles Avenue, Madison, N.J.; **William D. Rankin**, 340 Knoelder Road, Pittsburgh, Pa.; **Hsio W. Shih**, 124 East 39th Street, New York, N.Y.; **Yechiel Shulman**, 1248 Ash Street, Winnetka, Ill.; **Henry S. Slayter**, 2d, Box 337, Lincoln Center, Mass.; **Arvid H. Strom**, 102 Holly Road, Nitro, W. Va.; **Alfred C. Switendick**, 2901 Cardenas Drive N.E., Albuquerque, N.M.; **Fred- erick D. Van Sicklen**, 32 Sturbridge Road, Wellesley Hills, Mass.; **Jon Van Winkle**, 3331 Elstree Drive, Char- lotte, N.C.; **Jack A. Yoblin**, Nuclear Met- als, P.O. Box 125, West Concord, Mass.; **Robert H. Youden**, 3470 Janice Way, Palo Alto, Calif. . . . Write soon and write often.—**Norman R. Gardner**, Secre- tary, 100 Memorial Drive, Cambridge, Mass.

'54

This issue brings to a close your sec- retary's first year. During this period, class notes have been in each issue, ad- mittedly somewhat sparse at times. The names of 110 undergraduate and graduate classmates have appeared in them. Sev- eral different methods have been utilized to generate information including the writing of almost 100 letters. Next year a questionnaire will be sent out and hope- fully the class co-ordinating committee will bring our class somewhat closer to- gether. . . . On July 24, 1961, the Standard Paper and Merchandising Com- pany's president opened the cellar door— only to be greeted by four feet of water. Thus began the story which brought **Ernest Abrahamson** into Superior Court in Springfield. The question at issue was the character of the metal in a section of the water meter which was discovered on the floor after the water had been pumped out. As an expert witness, our classmate was of the opinion that the piece had been subjected to slow corrosion for five

years while it was in storage. . . . **Frank A'Hearn**, our Vice-president, moved to a new home in Concord last December. Frank and his wife Margaret have two children now, Christopher, three and Jennifer, one. Following receipt of a mas- ter's degree in industrial management from the University of Nebraska, Frank joined MITRE where he is doing eco- nomic analysis of large-scale electronic command and control systems. . . . From **Wally Boquist** a postcard from Kahula, Hawaii, and the note that **Joe Bova** is sales manager for Hawaiian Equipment Company.

Ed Eigel has been appointed assistant to the dean of the graduate school at Saint Louis University. This will keep Ed out of mischief in the afternoons, pri- marily dealing with scholarships and fel- lowships. Mornings will still belong to research and teaching in the mathematics department. In addition, Ed is one of two Danforth associates at the University. The associates are appointed by the Dan- forth Foundation and work toward better student-faculty relationships. . . . Tem- plar, Inc., a manufacturer of floor, wall, and ceiling tile adhesives, has appointed **Walter J. Marvin, Jr.** to be its new presi- dent. The firm also plans to expand in the field of construction chemicals. . . . Among the graduates we note that **Sey- mour L. Blum** has been named to head the ceramics division at the Illinois Insti- tute of Technology Research Institute. Seymour, who is chairman-elect of the electronics division of the American Cer- amic Society, lives in Glencoe, Ill., with his wife and 12-year-old son. . . . **David A. Hill**, Chief Physicist for the physics and space sciences department of Vitro Laboratories, spoke at an April collo- quium of the M.I.T. Physics Depart- ment. . . . **Edward Sable**, a 35-year em- ployee of the U.S. Weather Service, re- cently received an award from the Chief of the Weather Bureau. Edward, for many years the climatologist at Boston, is pre- sently the public service forecaster at Lo- gan Airport. . . . From your class of- ficers, our best wishes for a wonderful summer. Hopefully this will include at least one letter telling us of your activi- ties.—**Bob Evans**, Secretary, 43 High Street, South Acton, Mass. 01771.

'55

Writing early in May, we hope for once that much of this news will no longer be news by the arrival of the July Review—for those who make it to Prov- incetown, that is! Though the pile of questionnaires is tempting, let us pass on other news received via letters and news- clippings before the latter get too dusty. . . . First we regretfully note the death in May, 1964, of **Thomas Goodman**, Professor of mechanical engineering at Northwestern University, after a brief illness. Prior to receiving his doctorate at M.I.T. in 1955, Professor Goodman was a Rhodes scholar; subsequently he held a Guggenheim Fellowship and a Fulbright senior research grant on kinematics of

mechanisms at the Technische Hoch- schule in Munich. He was a U.S. dele- gate to the first congress of the Interna- tional Federation of Automatic Control in Moscow; a recipient of the Melville Prize Medal of the A.S.M.E. in both 1958 and 1962, of the honors award of the A.S.M.E. division of instruments and regulators in 1956, and of the North- western University alumni merit award in 1963. He had been employed by both the General Electric Company and West- inghouse and had engaged in research in the field of design and experimental eval- uation of automatic systems at North- western in addition to his teaching for about a year prior to his death. . . . This winter **Luis Aldaz** checked up on the weather in Boston via friends on Be- con Hill with a ham operator in Need- ham acting as intermediary. Spaniard Luis is now at the South Pole Station, U.S. "Operation Deep Freeze," chief scientist of an expeditionary team! . . . **Don Brennan**, a researcher at the Hudson Institute at Harmon-on-Hudson (and president of that institute from 1962 to 1964) was a nominee for chairman of the Federation of American Scientists this spring. No election results to date.

Our congratulations to **Gilbert Strang**, Associate Professor of mathematics at M.I.T., on his Sloan Foundation fellow- ship award for unrestricted basic re- search. A Rhodes scholar from 1955 to 1957, Gil received his doctorate from U.C.L.A. in 1959. He was C. L. E. Moore Instructor at M.I.T. from 1959 until 1961, when he became a NATO Post- doctoral Fellow at Oxford, returning to M.I.T. in 1962 to resume his faculty post. He plans to use his two-year fellowship to study theoretical aspects of the solu- tion of partial differential equations by finite difference methods, spending part of his time during the study in England and Sweden. . . . **Lloyd Gilson** was pro- moted about this time last year to op- erating superintendent of the color service area at the Monsanto plant in Springfield. . . . Better late, etc.: On the first of this year **George Raymond** became executive vice-president of Raymond Engineering Laboratory, Inc., in Middletown, Conn. A specialist in ordnance devices for missiles and rockets and in magnetic tape recorder reproducers in spacecraft to store and play back to earth scientific data since joining the company seven years ago, he lives with his wife and son in Middle- town. . . . **John Herther** is now assist- ant manager of the optical systems divi- sion of Itek Corporation in Lexington. John has been at Itek and living in Lex- ington with his wife and two children since 1958, before which he was a U.S.A.F. engineering project officer. . . . **Leonard Salvador**, formerly with Skid- more, Owings, and Merrill, has become a partner in the White Plains, N.Y., archi- tectural firm of Gibbons and Heidtmann. . . . **Peter Affeld**, who with Marilyn and their two children lives in Darien, Conn., has been appointed assistant to the presi- dent of the Richardson Foundation, Inc., in New York City. His principal activi- ties will be investments and long-range planning. Formerly vice-president of Piedmont Advisory Corporation, a pri-

vate investment counseling firm, Peter has also been employed by Gulf Oil and Vickers Petroleum.

A summer wedding is planned by **John McNeil** and **Constance Kissinger**. John will graduate in June from the Menlo School of Business Administration; Connie, an alumna of Mills College, has been working in San Francisco. . . . **Paul Attridge's** fiancée is **Pauline Eaton** from Hillsboro, N.H. Paul is vice-president and treasurer of **Walter S. Attridge Company**, insurance firm, and is presently serving as vice-president of the Boston Board of Fire Underwriters, Inc. . . . Late news from **Chan Stevens** is that there is now a W. Chandler, 3d, so best wishes to the Stevens tribe! . . . Catching up on news gleaned from questionnaires and from personal interviews will be a pleasure in the fall. Co-secretaries: **L. Dennis Shapiro**, Aerospace Research, Inc., 130 Lincoln Street, Boston, Mass. 02135; **Mrs. J. H. Venarde (Dell Lanier)**, 2401 Brae Road, Wilmington, Delaware 19803.

'56

Lloyd Beckett is leaving the M.I.T. Industrial Liaison Office to join Amicon, a Cambridge firm specializing in development of porous membranes. Lloyd will be manager of sales and market research; Professor Michaels of the chemical engineering department is president. . . . In a recent card, **R. Kirk Brogren** says he is still designing electric utility power plants for Stone and Webster in Boston. The Brogrens now have three children. . . . In March **John Newman** visited the Institute to conduct a seminar on "Theory for the Drifting of Ships in Waves." John's home base is the David Taylor Model Basin of the Navy department in Washington. . . . **Richard Unruh** has been an assistant professor of architecture at the University of Oregon since 1963. In addition, he is an associate on the university planning staff and this spring participated in a public lecture series. Previously Dick studied in Holland on a Fulbright grant and spent four years with Skidmore, Owings and Merrill. . . . **Wolf Vieth** has become the head of the Institute's department of chemical engineering practice. However, the brightest occasion for the Vieths in 1965 is the birth of their third child and first boy, Christopher. . . . By the time the next Technology Review is published the 10th Reunion committee hopes to be well under way in formal planning of our activities in June, 1966. More help is needed, so please contact the chairman. . . . An item concerning your secretary: I have increased my work load of alumni activities by accepting the job of president of the M.I.T. Club of Boston. Now more than ever your voluntary cooperation in gathering information for these articles will be appreciated.—**Bruce B. Bredehoff**, Secretary, 16 Mill Brook Road, Westwood, Mass. 02090; **Robert L. Malster**, President, 24 Alcott Street, Acton, Mass.

'57

I'm sorry to have missed last month's column. There just wasn't any news. The only item to report this month comes from Honolulu, Hawaii, and **Harry Flagg**. Harry dropped me a line on the stationery of Telecheck International, Inc., a new enterprise of which he is president. An enclosed brochure and a newspaper clipping informed me that the firm provides, through a centralized computer installation, verification of personal checks for companies that cash such checks as a service for customers. At present operations are limited to Honolulu and New York. In the memory of the computer information is stored from police records, collecting agencies, credit card organizations, credit agencies, records of subscribing companies and experience from past check verification. The subscribers call Telecheck on the telephone and give the name or driver's license number of the drawer of the check. The information is fed into the computer and within four seconds an answer is provided telling the subscriber whether it is safe to accept the check. Telecheck gives a guarantee on its approvals up to \$30. It's an interesting operation. Best wishes for success, Harry. . . . Well, that's all for this year. I've completed my third and final year at the Harvard Law School. In late August I will join Socony Mobil Oil Company in New York. I don't know as yet where I will be living. If you are in New York in the fall, please give me a call at work; possibly we can get together for a chat. I plan to get out a news request to a large number of people in the class in August. If you are contacted, please help me out. Until November, best wishes.—**Frederick L. Morefield**, Secretary, 1A Acorn Street, Boston 8, Mass.

'58

Heard from **Dick Procunier** in merrie olde England via letter this month. Dick and Janet are living in Radlett, near Watford (20 miles N.W. of London), with their two children, John, four, and recently arrived Nancy, one, and a German shepherd puppy named Werner. The entire entourage, sans Werner, visited the States last fall while Dick was in Florida in connection with our missile launchings. Between trips—Stockholm and Rome, and projects—do-it-yourself Yorkstone fireplace, Dick is at work on his thesis. Janet keeps up on local history and is doing a little writing for publication. . . . **Chris Gimre** is working with Owens Illinois in their marketing and new product development group in Toledo. His major market activity in the industrial-electronics group is with customers for glass for TV picture tubes. Previously he was a field engineer before moving inside the product group. Chris and his wife Connie are quite proud of their son Steve who is now eight months old. . . . **Harry Ross** is working for Texas Instruments in Dal-

las. . . . **Don Grimes** is with the research department in Inland Steel in Gary, Ind. . . . Diamonds (man-made) are **Ken Gillis'** best friend; he is with the electrical products division of G.E. in Detroit which manufactures diamonds for a variety of uses. He has been an engineer there for two years dealing with non-abrasive applications. Ken, a former Detroit, transferred from G.E., Syracuse, with his wife Dorothy and their three-year-old daughter Erica.

We have learned belatedly, and to our sorrow, of the death of two members of our class; no detailed information was given. We extend our sympathy to the families of **Michael Edelstein**, Course VI, and **Ralph E. Manchester**, Course II, for their and our loss—**Michael E. Brose**, Secretary, 205 Pine Street, Tecumseh, Mich.; **Antonia D. Schuman**, Western Associate, 22400 Napa Street, Canoga Park, Calif.; **Kenneth J. Auer**, Midwestern Associate, 23105 Stoneybrook Drive, North Olmsted, Ohio.

'59

The sluggishness that always accompanies warm weather has set in, and my interest in writing has reached a new low. Happily, you and the news clipping services also seem to have the same problem; with only one item to report this month, my job is easier. . . . The item, I'm sorry to say, is a retraction. Several months ago, as a result of a news clipping from an Illinois newspaper, I reported that **Dick Desper** has been chosen by NASA to take part in the astronaut training. It was all a mistake, and I'll let Dick explain it in his own words: "I was quite surprised to see my name appearing in this month's Technology Review, apparently as a result of an enthusiastic hometown newspaper and a zealous press clipping service. I had been sort of sitting on this piece of news, allowing it to develop further when my issue came and there it was, to my surprise, in black and white. No doubt the congratulations will soon start pouring in, and my life insurance company will try to cancel me, and it really seems a shame to put a damper on the whole business. My application went to NASA, along with thousands of others, during the winter. My father was very proud of it all and caused an article to be written in the hometown newspaper, which apparently waxed very enthusiastic about the whole business, despite the fact that there were thousands of applicants. But, nonetheless, the fact remains that my name was being very seriously considered for one of these astronaut positions. However, much to the relief of my wife and my mother, NASA decided that I was not among those best qualified for the few positions available. I was recently notified that I had failed to survive the most recent cut; as a matter of fact, the letter came the day after I received the issue of Technology Review. (For awhile I was wondering whether you knew more about it than I did.) Well, it was fun while it lasted, but now we must

all come back down to earth. I would have been proud to be '59's contribution to the space program, but I'm sure there will be someone else from our class representing us in the moon program. Sorry to disappoint all of you." I'm sorry too, Dick, but I have to rely on the copy that is sent to me. It wasn't until shortly before your letter arrived that I realized that something might be wrong with the article. I had mentioned your achievement to a friend who had also applied for the program and who, like yourself, had survived several cuts: he expressed shock and disbelief when he heard, because he had been told that final selections would not be announced until the end of April. (He, too, lost out on the final choice.) You did well to survive so long, because rumor has it that NASA misled the applicants by making them think that most fields of science were desired for this program; in reality, this particular project needed geologists, etc., for studies on the lunar surface, and it was feared that there would not be enough applicants in the desired disciplines. For that reason, they encouraged advanced degree people in general. Going on further with the rumor (and probably getting into deeper water as I go) there is to be another recruiting campaign soon; this one, not necessarily dealing with moon shots, will require a much wider range of professional talents. Like Dick, I'm quite sure that we'll soon find a '59er in the astronaut ranks, but I'm equally sure that it will not be "announced" first in this column.—**Glenn Zeiders**, Secretary, 3 Rose Avenue, Watertown, Mass.; **Wayne Worrell**, Assistant Secretary, 2335 Parker, Berkeley, Calif.

'61

Bill Swanson was in town briefly last Spring. He has covered Europe with the Navy, as supply officer on the destroyer *Charles R. Ware*, for the past year or so. Lt. (j.g.) Swanson is now to be found at N.A.S. New Orleans, La., where he is a Materiel Officer. Plans beyond March, 1966, are unsettled. . . . And that rounds out four years of class notes for yours truly. It has been a pleasure (mostly!) to serve you. All thanks to those of you who've written once, or oftener, since graduation. Those who haven't, redeem yourselves by dropping a line to my successor, **Andy Braun**, who will handle the column and other secretarial chores until next June. It has been a pleasure, also, to serve you as 1961's representative on the Alumni Council. My successor in this post, as you noticed on your Alumni Association ballot last spring, is **Pete Gray**. Contact Pete if you're in town the last Monday of any month during the academic year, and are interested in attending one of the always-interesting Council meetings. Things may work out so that I can be back from Europe briefly, around the beginning of summer, in which case I'll see you at five-year Reunion. If not, have a ball, and I'll see you at our 10th! Good

luck to you all.—**Joseph Harrington 3rd**, Secretary, 22 Hidden Road, Andover, Mass. 01810; **Andrew G. Braun**, Acting Secretary, 1038 Beacon Street, Brookline, Mass. 02146.

'62

I got a long letter from **George Meyer**. George evidently didn't realize that I'm married and/or that wives get to mailboxes before husbands do. However, there was plenty of news in the letter so it was worth it. . . . **Joe Perkell**, who is at Harvard Dental School, is living with **John Prussing** and **Brandy Qualls**. John is at M.I.T. graduate school in aeronautical engineering and Brandy is studying linguistics. . . . **Howie Graves**, who was working in Los Angeles for a while after graduation, is back in Boston working for Raytheon and is also living with Joe, John, and Brandy. . . . **Max Snodderly** is at the Rockefeller Institute in New York studying neurophysiology and reputedly living in the lap of luxury. The Snakes are apparently scholarly as well as athletic. . . . George ran into **Steve Helsen** at the National Museum of Art in New York. Steve reported that **Steve Levy** has been married, that **Steve Kapelew** is in Boston with his father's construction company (the ZBT's had more Steves than they knew what to do with), and that **Pete Brown** has married Kapelew's sister and is working for the same company. . . . **T. J. Lageman** is married to the former Marge Turner and is living in Houston, Texas. . . . George was shown around San Francisco last summer by **Harold Yang** and his wife, the former Ruth Takenaka. Harold is working for IBM in San Jose, Calif.; he received his master's at the University of Hawaii. . . . Harold noted that **Jimmy Omura** is doing graduate work at Stanford. . . . **Larry Pitts** is finishing his tour of duty in the Navy and is planning to go to Western Reserve Medical School. . . . **Lynn Whelchel** and **Abe Aronow**, who were both at Dartmouth Medical School, are now at McGill University in Montreal and Harvard Medical School, respectively. George has one more year to go at Tulane Medical School in New Orleans and submits a standing invitation for anyone passing through to look him up. He plans to spend this summer in Europe and to intern in San Francisco (home of the topless bathing suit) after he graduates. Thanks for the letter, George.

Rich Garber, who graduated in the same class with me at the Stanford Business School, wrote that he finished a six-month hitch in the Army and is working for the construction firm of Rothschild, Raffin, and Weirick. This is a San Francisco based firm, but Rich has been working on a dam project in a flooded area in Northern California. . . . **Hans C. Anderson** and **Donald A. Martin** have been named Junior Fellows in Harvard University's Society of Fellows. They will receive handsome fellowships and will be free to use Harvard's laboratories, libraries and other resources to develop their

own fields of interest for three years. Fellows are selected for "their promise of notable contribution to knowledge and thought," and are free from academic regulations for degrees. Past Junior Fellows have become leaders in all branches of the Harvard faculty. This is a tremendous honor and we should all be proud of our classmates. . . . **Vincent Lysaght, Jr.** completed a nine-week ordnance officer basic course at the Army Ordnance Center and School, Aberdeen Proving Ground, Md. Vincent is a second lieutenant.

My wife and I attended an M.I.T. Club of Hawaii meeting and saw slides of the new buildings at M.I.T. I was amazed at the amount of change that has taken place in just three years. I have been continuing to work on Oceanic Properties' planned New Town at San Jose, Calif., and have been traveling back and forth between here and California about once a month. If anyone is planning to come through Honolulu this summer, please be sure to look me up.—**Jerry Katell**, Secretary, 2819 Pacific Heights Road, Honolulu, Hawaii 96813.

'63

We regret to announce the death of **James Halpin Skeldon** on April 11 after a prolonged illness. . . . The class treasurer's report on May 8 showed a balance of \$364.21. The class agents, **Jim Champy** and **Frank Cocks**, reported that as of March 31, \$2280.84 had been received by our Loan Fund since last July. The dollar amount is respectable, but only because one anonymous donor gave \$750. We are behind all other classes in number of people who give, even though we are ahead of four in dollar amounts. If we can just get more people each to give a little, the fund will be quite a success. And remember, each donor gets a free year's subscription to *The Review*. This year the Fund has benefited two more students through loans. . . . Two letters have been received: One from **Dan Greenwald** who is now in Philadelphia at Hahnemann Medical College; the other from **Pat O'Neil** and **Elizabeth Hall O'Neil** (Betty). They were married last New Year's day. Part of Betty's letter follows: "Pat got his M.S. in pure math at University of Chicago last summer and is now working at IBM at Tech Square while I'm still luxuriating at Harvard graduate school in applied math. I just got back from visiting my Ph.D. thesis advisor (on sabbatical at the University of W. Australia) in Perth, Australia. It was a very quick trip around the world: three days flying time plus three and a half weeks in Australia plus one day in London! Perth is a beautiful and friendly little city where they go out of their way to welcome Americans and crowd around to hear 'that wonderful American accent!'"

The cocktail party held on May 8, drew classmates still in the Boston area. Your class secretary played reporter and gathered lots of bits and pieces. If some-

thing said about you is false, write me a letter! The dope follows: **Bill Klehm** has a baby boy. . . . **Pete** and **Diana Svahn** are living in North Andover where he is working for the power company. . . . **Woody Bowman** will be working on a Ph.D. in economics while a teaching assistant at Syracuse. . . . **Sam Popkin** just published a book as co-author with Professor Pool. . . . **Jack Lynch** has his M.S. in electrical engineering and is working for MITRE. He is getting married in August. . . . **Bob Beach** has gotten his M.S. in electrical engineering at Purdue. . . . **Lanny Gardner** married **Behna Vogel, Smith '65**, and is at Harvard Medical. . . . **Dave Ecklein** got his M.S. in math at Syracuse. . . . **Paul Sander** is teaching physics at Newton High School after a year of traveling. . . . **Bob Turtz** owes **Steve Kaufman \$25**. . . . **Bob Morris** is at Harvard Law. . . . **Bob Kurtz** is at medical school in Louisville, Ky. . . . **Jim Champy** is an instructor in Course I. . . . **Lance Webb** is working part-time at Raytheon. . . . **Frank Cocks** passed his generals and will finish up next February. . . . **Bernie Hopp** just got his M.B.A. at Harvard and is now at Celanese in N.Y.C. as assistant merchandising manager. He wants **Frank Verlot** at Stanford to write him. . . . **Mike Lifschitz** is at B.U. Medical. . . . **Tom Gerrity**, our Rhodes Scholar, will begin work on a Ph.D. in XV this fall.

Lauren Sompayrac and his wife **Linda** are living near Harvard Square. Lauren was elected to represent the class at Alumni Council meetings for the coming year. . . . **Dave Caldwell** will go on for a Ph.D. in VI. . . . **Maurice Andrien** is married and has a child. . . . **Bob Vernon** is now with R.C.A. at Cherry Hill (data processing division). . . . **Jim Dodge** and **Larry Casey** are still at the Institute. . . . **Mike Sherif** is married and at University of Oklahoma Law School. . . . Bearded **Jim Fidelholtz** is working on his Ph.D. in linguistics. . . . **Steve Aldrich** just got his M.S. in civil engineering and is now in the working world. . . . **Harold Branson** is getting married and is with Aerojet General in Sacramento. . . . **Kent Groninger** is going on for a Ph.D. in Course I. . . . **Mike Greata** has been coaching a highly successful frosh lightweight crew. . . . **Tony Doeppkin** has passed his qualifying exams in VI. . . . **Gary Stone** is going to Harvard B-School this fall. . . . **Carl Dover** is working on a Ph.D. in VIII. . . . **Bill Jessiman** has gotten married. . . . **Bill Pettus** is in Chicago. . . . **Tim Sloat** is married and at Rocketdyne in L.A. . . . **Larry Demick** is also in L.A. . . . **Dan Gross** is a computer consultant with the National Institute of Health. . . . **Bob Levin** got an M.A. in Political Science at Northwestern and is now at the University of Chicago Law School on a full-time fellowship. . . . **Al Kessler** is working with Professor Pool. . . . **Earl and Sue Lane** have a baby girl. . . . **Stu Kurtz** is working on his Ph.D. in chemical engineering at Princeton. . . . **Ben Saievetz** got his Harvard M.B.A. and is now with McDonal in St. Louis. . . . **Ray Soifer** became a Baker Scholar (top 5 per cent) at Har-

vard B-School. . . . **Pete Van Aiken** will go to the B-School this fall. . . . **Lt. Joe Alexis** recently won his silver navigator's wings in the Air Force. . . . If you have any news or want someone's address, write to me in Miami, since I, too, have finished school in Boston now.—**Bob Johnson**, 1089 N.E. 91 Terrace, Miami, Fla. 33138.

'64

This is the last installment of class news until publication resumes in November. I hope you are all having a pleasant summer and will keep me informed of your whereabouts and news for the next issue. My address from September until June for the next school year will be: Dane Hall 102, Cambridge, Mass. 02138. That is just one floor down from where I am now. More \$3 contributions from the class have been coming in and are reported below. As all the bills from the class directory are coming in the expense keeps rising. A little over \$200 has been contributed by the class which will cover the total expenses but only leave a little bit over. . . . The new contributors are: **Mark Ain**, who returned in February from seven months of travel and study abroad. He is working as a technical writer in New York and will go to business school this fall either at Rochester, where he has been offered a scholarship, or Columbia. . . . **Ed Casper** was married this June to Gale Just of New Britain, Conn. They will live in New York while Ed continues working toward his Ph.D. in organic chemistry at Columbia. . . . **Howard Ceder** is continuing his studies at N.Y.U. medical school. . . . **Pete Chesbrough** is continuing his Ph.D. studies at Georgia Tech, as reported in the May issue. . . . The parents of **King Clifford** sent a contribution for him, knowing that he would have done so if alive. As reported in the March issue, King passed away in January of a congenital heart condition. In a very sweet letter King's parents wished "success and happiness for all King's classmates in whatever they do as M.I.T. graduates."

. . . **Stewart Colten** spent last year at Berkeley studying political science. This fall he is resuming studies in chemical engineering at Syracuse. . . . **Harris Demetriou** is serving with the Cyprus Air Force. . . . **Bill Euerle** is living in Allentown, Pa. . . . **Larry Kaldeck** is living in Dracut, Mass. . . . **Bruce Knoke** is in New York. . . . **Steve Miller** is at Harvard Business School and says he has no complaints. . . . **Joe Perkinson** is living in Plainfield, N.J. . . . **Gary Rauch** is in Urbana, Ill. . . . **Dennis Smith** is married to the former **Ellen Fisher** of Lexington, Mass., and Wellesley. Both are attending Berkeley. He is in graduate school in chemistry and she is an undergraduate in political science. They are the proud parents of a son born April 6 of this year. . . . **Gary Walpert** is in grad school at M.I.T. . . . And now for random news from others of the class: **Mark Alpert** of Duluth, Minn., was named the outstanding graduate student in University of Southern Cal's School of Business Administration. He received a M.S. in June. . . . **John Bailey** is back home in Johnson City, Tenn. . . . **Joe Kasper**, who contributed earlier, reports that his name was erroneously spelled with a C in the May issue. He is returning to M.I.T. in September after a year at Cornell. . . . **Steve Lapidés** of Pikesville, Md., recently finished an eight-week clerical course at the Army's center at Fort Knox, Ky. . . . Captain **Philip Salyer** received his M.S. in 1964 and is now working for the Air Force in Los Angeles. His project is helping to modify the Agena space vehicle for Project Gemini. . . . **Gail Ulrich** was co-author of an article concerning the behavior of metal alloy galvanic cells in the American Chemical Society publication. . . . **David Wade**, who received his Ph.D. in 1964, is working for the Knolls Atomic Power Lab in Schenectady, N.Y. . . . **Roger Hybels** was married to **Judy Hickox** of Wellesley and Shaker Heights, Ohio, on June 18. He is now at the University of Michigan Medical School. Judy will be studying economics at Michigan. That is all the news for now. Best wishes to you all.—**Ron Gilman**, Secretary, 2227 Vollentine Avenue, Memphis, Tenn.

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Club News



Professor Rosenblith Discusses Computer Work in Ontario

On April 9, the M.I.T. Club of Ontario had its final meeting of the season, at The York Club in Toronto. Thirty-five alumni, wives and guests heard Professor Walter A. Rosenblith discuss "The Computer and the Brain." Professor Rosenblith emphasized that the computer has been of great value in acquiring new knowledge of the brain, but that it would require the synthesis of many disciplines to fully understand the brain. Of great comfort to our group of alumni and their dependents was the speaker's opinion that the computer would not obsolete the brain, but would, rather foster a division of labour between man and machine. Local alumni who attended the meeting were: Eric Baker, '64; Neil Beaton, '35; Manny Birnbaum, '30; John Buss, Sherman Chow, '57; Jim Crewe, '54; Dirk Feenstra; Jack Keenan, '23; Alan Kotliar, '57; Michael Koerner, '49; Paul Lawrence, '51; Ian Lounsbury, '48; Bailey Nieder, '43; Ed Peacock, '47; Douglas Rogers, '53; Murray Rowsell, '53; Gordon Shaw, '60; Don Taylor, '50; Tom Waldin, '64; Robert Winters, '33; Beatrice Worsley, '47. We were pleased to welcome George Moy, '57, a visitor from Texas.

Before the principal speech, our group was addressed by Robert Winters, '33, Member of the M.I.T. Corporation, and immediate past-president of the M.I.T. Alumni Association. Mr. Winters, who is also chairman of York University in Ontario, told us about recent developments at M.I.T. and helped us, in a most delightful manner, to understand the administration of a modern university.

The meeting ended after electing the new slate of club officers. They are: Michael Koerner, '49, President; Alan Kotliar, '57, Secretary; Sandy El Baroudi, '57, Treasurer; and Max Coutts, '39, Jack Keenan, '23, Harry Pearson, '23, Bob Winters, '33 and Ed Peacock, '47, Directors.—Alan Kotliar, Secretary, 494 Avenue Road, Toronto, Ontario, Canada.

Anniversary Celebrated in Northern New Jersey Club

The 30th anniversary of the M.I.T. Club of Northern New Jersey was celebrated on May 5, at the annual dinner held at the Robert Treat Hotel in Newark. To mark this notable occasion all available past-presidents of the Club gathered together, some traveling from quite distant points, and were honored for their efforts on behalf of the Club. David Shepard, '26, Life Member of the Corporation and Executive Vice-president of Standard Oil Company (N.J.), introduced our guest speaker, James R. Killian, '26,

Chairman of the Corporation. Dr. Killian thanked the Club for its efforts in behalf of M.I.T. and spoke briefly of the many programs in progress at Tech made possible by the Second Century Fund. The guests gave Dr. Killian a standing ovation.—E. S. Liss, Secretary, 154 Elmwood Avenue, Glen Rock, N.J.

M.I.T. Club of Boston Hears "Mr. Oceanography"

At noon on Thursday, May 13, the M.I.T. Club of Boston held its eighth and annual meeting of 1964-65 at Ye Old Union Oyster House on Union Street. A total of 78 members and guests attended. A new slate of officers and executive committee members for 1965-66 was presented by the nominating committee and approved by those present. President, Bruce B. Bredehoft, '56; Vice-President, Paul E. Weamer, '49; Secretary-Treasurer, Glenn P. Strehle, '58; Executive Committee: Robert C. Cowen, '49, Atwood P. Dunham, '17, Douglas F. G. Haven, '52; George Macomber, '48. After the business meeting Dr. Columbus O. D. Iselin—"Mr. Oceanography"—gave a talk on his answer to the problem of accurate over-water navigation. During the current alumni year, the club recorded 309 dues-paying members.—Bruce B. Bredehoft, '56, Secretary-Treasurer, 16 Mill Brook Road, Westwood, Mass. 02090.

Dr. H. Guyford Stever Talks To Western Pennsylvanians

At the final meeting of the M.I.T. Club of Western Pennsylvania on May 3, Horton Guyford Stever, new President of Carnegie Institute of Technology, addressed the group. Prior to accepting his new responsibility in Pittsburgh, Dr. Stever was head of the Departments of Mechanical Engineering, and of Naval Architecture and Marine Engineering at M.I.T. He received his A.B. at Colgate University and his Ph.D. in Physics from California Institute of Technology. His work has covered a broad range of fields in science and technology, and Dr. Stever discussed the characteristics of modern science and technology.

At this final meeting, officers for the coming year were elected, as follows: Eli I. Goodman '50, President; Jerome P. Hahn, '47; Donald Roellike, '57, Treasurer; and Harry F. Raab, Jr., '50, Secretary. New directors for a three year term are Eli Goodman, Donald Roellike, Harry Raab, and William H. Shenkle, '51. Incumbent directors are Bernard Lewis, '23, Edward F. Murphy, Jr., '41, Benjamin W. Steverman, '31, Hugo C. Johnson, '46, J. L. Taylor, Jr., '02, Ernest U. Buckman, '46, and Jerome Hahn.—Harry F. Raab, Jr. '50, Secretary, 5053 Grove Road, Pittsburgh, Pa., 15236.

Gil Lewis, '51, Is Elected Head of Washington Club

Officers elected for the 1965-66 season of the Washington, D.C., Club were: Gil Lewis, '51, President; J. J. Phillips, Jr., '38, 1st Vice-president; and Sylvia Waller, '47, 2nd Vice-president. In addition to election of officers the dinner meeting April 15 included a panel discussion of cybernetics. Oliver J. Caldwell, Acting Associate Commissioner of HEW, and Director of the Division of International Education, noted the progress the U.S.S.R. is making in the efficient utilization of the human brain through cybernetics research. The Soviet Institute of Cybernetics controls the insane asylums in the U.S.S.R. and has been engaged in long term research unmatched anywhere in the world on the human brain, according to Dr. Caldwell. Paul Henshaw, A.E.C. biophysicist and Chairman of the Board of the American Society for Cybernetics, said that there is a tendency in the United States to shy away from cybernetics and its implication, and Paul W. Howerton, Visiting Professor of Technology of Management and Director of the Center for Technology and Administration, American University, remarked that we have reached the end of the industrial revolution and are entering the mental revolution. The ensuing questions and answers ranged from discussions of the plight of the engineer to the possibility of further curtailment of individual freedom.

Interesting things happen to people who address the Downtown Luncheon Group. Charles Schultz was appointed Director of the Bureau of the Budget about a week after his talk on budgetary and programming aspects of R & D decision making.—J. J. Phillips, Jr., '38, Publicity Chairman, 3606 Fulton Street, N.W., Washington, D.C.

Future Highways Discussed At Puerto Rico Dinner

On April 22, the M.I.T. Club of Puerto Rico had a reunion at the Top of the First in Santurce. Some 50 persons, including club members, their wives and guests heard Charles L. Miller, '51, Professor of Civil Engineering at M.I.T., our welcome guest speaker. Juan Labadie, president of the Puerto Rico Development Bank, also spoke that evening on "The Future of Roads and Highways in Puerto Rico." Among those present were Mr. and Mrs. Angel A. Del Valle, '43; William Reed, '33; Jorge Lopez Ramirez, '45; Tony Rayanan, '42; H. F. Silby, Jr., '41; Manuel Vinas, '45; Cesar S. Canals, '26; Art Zimmerman, '59; Rafael Fabregas, Jr., '55; Manuel Font, '13; Antonio S. Romero, '12; Santiago E. Quesada, '60; Edward S. Fleming, '34; Peter W. Sinz, '57; J. Adalberto Roig, '24; Orlando De Aragon, '39; Ulises Barros, '55, Luis A. Ferre, '31; Miguel A. Barasorda, '59; Telesford C. Carrero, '47, Owen Martinez, '60; Pedro F. Mora, '64; Angel Silva, '31; Oscar E. Hau, '44; Luis Fernandez Sein, '60; and Antonio Badia, '43.—Antonio Badia, '43, Secretary, P.O. Box 1397, Hato Rey, Puerto Rico 00919.

Sloan Fellows

News from Sloan Fellows' Class of 1963: **Carl F. Stuehrk** has been transferred by A.T.&T. from New Jersey to Kansas City, where his new home address is 3624 West 92nd Terrace, Leawood, Kansas. He writes that, "The new job includes fairly extensive traveling throughout the western half of the U.S." . . . **Gus Gartner** has been promoted to assistant vice-president—marketing, of the Illinois Bell Telephone Company. He is responsible for coordinating Bell System Services with the electric power industry. . . . **Stan Smith** has been promoted to division commercial manager for Northeastern Bell in Minneapolis.

Edward S. Gill, '58, assumed new duties on April 1, as general operations manager for the Central Area of The Bell Telephone Company of Pennsylvania in Harrisburg, Pa. Before receiving his new assignment he was Bell's general commercial manager in Harrisburg.

Dr. Killian Addresses Group in Wilmington

Close to 150 alumni, their wives and guests, including a delegation of educational people turned out for our spring meeting at the Wilcastle Center in Wilmington, Del., on Saturday, May 15. Gil Monet, '43, John Murdock, '41, and the weatherman did a splendid job of coordinating and arranging so that the guests, including many from the Philadelphia area, were able to enjoy one of those delightful spring afternoons with visits to Longwood Gardens, the Hagley Museum, and Antique Car Show, followed by a reception for Dr. Killian before dinner. Three of the five members of the Corporation from the area, Walter J. Beadle, '17, Donald F. Carpenter, '22, and George P. Edmonds, '26, were in the receiving line with Dr. Killian. After dinner Dr. Killian's address describing the vast changes in areas of education that are taking place, with M.I.T. as one of the prime movers, met with an excellent response and a very active discussion period.—John B. Murdock, 15 Runnemede Avenue, Lansdowne, Pa.

Rhode Island Club Headed by Edgar J. Staff, '35

The annual meeting of the M.I.T. Club of Rhode Island took place at the Brown Faculty Club on May 12, in Providence. Mrs. Jacquelyn Mattfield spoke on the women's activities at M.I.T.

The officers of the club were elected as follows: Edgar J. Staff, '35, President; Eli A. Grossman, '36, Vice-president; Stewart Phillips, '32, Secretary.—Eli A. Grossman, Vice-president, 104 Governor Bradford Drive, Barrington, R.I.

Atlanta Club Elects C. K. Holmes, '49, President

Bill Shuler and his charming wife, Aurelia, were hosts to members of the Atlanta M.I.T. Club and their wives at the annual meeting on the evening of May 14. The meeting was held in the Shulers' garden which was lighted for the occasion with Japanese lanterns. Steaks and lobster were cooked on outdoor charcoal grills to the individual's taste and a most enjoyable evening was spent by all who attended. At the business session, C. K. Holmes, '49, was elected president for the forthcoming year. W. T. Shuler, '38, was re-elected as vice-president and B. H. Meyer, '42, was elected for another year as secretary-treasurer. In order to provide continuity among the directors of the club, W. F. Spreen, '34, was persuaded to serve for another year, and Edward D. Johnson, '56, was elected for a two-year term. After dinner and the business meeting, Pat Moore, '48, our retiring president, presented and narrated a number of slides showing the new construction recently completed or currently in progress at the Institute. This was followed by a very interesting Lockheed-Georgia motion picture, "The Giant Step," about aerial mapping. Present at the meeting were: Roger W. Allen, '27; J. A. Ayres, '63, and his wife Nancy; James C. Bailey, '52, and his wife Nancy; Earl E. Blount, '28, and his wife Helen; Joseph T. Davis, '61, and his wife Carol; R. L. Flege, '32; C. K. Holmes, '49, and his wife Pat; Talbott R. Hopper, '63 and his wife Carol; Edward E. Johnson, '56, and his wife Patricia; Veeriah V. Kota, '53, and his wife Lois; B. H. Meyer, '42, and his wife Mary; Richard A. Miller, '56, and his wife Ann; C. P. Moore, '48, and his wife Mildred; William E. Moss, '52, and his wife Mary; W. T. Shuler, '38, and his wife Aurelia; W. F. Spreen, '34, and his wife Frances; Abner A. Towers, '39, and his wife Marcia; Brian P. Tunstall, '62, escorting Miss Carole Rogers; Harry M. Walton, '49, and his wife Betty. Several of our most stalwart supporters were unable to attend this meeting because they were far away at the time. Fred Dickerman, '39, was in Europe, and Elmer Sanborn, '12, was in California.—B. H. Meyer, '42, Secretary, 5845 Brookgreen Road, N.E., Atlanta 28, Ga.

Long Island Alumni Meet La Crosse Team

The members of the M.I.T. La Crosse team and their coach, assistant coach and faculty advisor, were entertained in April, in the home of Mr. and Mrs. Oliver Hoag, '35, in Long Island. Members of the M.I.T. Alumni from the Long Island area were present. Among them were Mr. and Mrs. Theodore Henning, '46, of Port Washington. It has become a tradition that when the team plays on Long Island, the alumni act as host. This spring the M.I.T. team played C.W. Post College and Adelphi College.—Douglas A. Tooley, '28, Secretary, 11 Cider Mill Lane, Huntington, N.Y.

St. Petersburg Alumni Have "Jollification Dinner"

The St. Petersburg, Fla., Fund Drive closed with a "Jollification Dinner," held at the Sand Dollar Restaurant in St. Petersburg on May 12. Area Chairman, Amasa M. Holcombe, '04, thanked all solicitors and contributors. Special guest was Tom Marks of St. Petersburg High School, who will be an alumnus of M.I.T. in 1969. Others at the dinner were: Harry Lord, '08; George Bousquet, '16; Donald Mackintosh, '22; Bill Upham, '23; Edgar Pierce, '33; Bob Caldwell, '43; Don Burke, '46; Tom Oliver, '48; Gene Purdum, '48; Bob Wedan, '51; and Pete Risser, '63.

At this year's Florida M.I.T. Alumni Meeting held in Tampa last January 22, the seminar discussion following the luncheon concentrated on (1) Fostering the goals of the Institute in Florida; (2) improving the activity and interest in Alumni Clubs; (3) improving the Alumni Fund Drive programs; (4) fostering better intercommunication among Alumni; (5) expanding the effect of the Educational Council; and (6) planning a bigger and better second meeting in '66. The following remarks typify the ideas and suggestions of the Alumni participating:

By subscribing to the Technology Review, each alumnus can have a continuing contact with major activities and trends at M.I.T. The remarks of the chairman, president, and department heads are reported carefully in the various issues, and are an excellent source of material on current doings to the Institute. Active (and vocal) support of the educational level and techniques fostered by M.I.T. should be shown in the everyday life of each alumnus.

The most effective club program would be one in which a semi-technical speaker would talk about items of particular interest to Alumni. As an example, it would be interesting to hear someone from the Institute talk about existing facilities and plans for new labs, etc. Other examples would be: the unclassified work at Lincoln Laboratory, a follow-up on Educational Services, Inc., more detailed information on high school programs, and discussions on the CORE curriculum recently introduced.

A list of all M.I.T. men now living or working in Florida would be of value and interest to alumni. Classifications by class, course, occupation and area were suggested. Interactivity among clubs should be improved by such lists, and it is likely that personal solicitation for the fund drives would be helped.

To show tangible support for the encouragement of higher educational goals for students in Florida secondary schools, a "starter" check for the Florida M.I.T. Alumni Scholarship Fund was presented to James R. Killian, Jr., '26, when he visited us.

It was hoped another club might begin plans for the second annual state meeting in 1966. A connection with the appearance of a major speaker from M.I.T. in Florida, or the occurrence of a major technological event (rocket launching, industrial complex opening, etc.) was suggested.—Donald E. Burke, President, M.I.T. Club of Central Florida.

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